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The Production and Management Journal Covering North America's Wood Pulp, Paper, Paperboard and Cellulose Industries

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"The Cellulose Age"

EDITORIALS

The seasonal variation in employment in pulp and paper is the lowest of 21 major industries.—U. S. National Industrial Conference Board.

Of Importance to This Industry

Two months ago we called attention to the fact that both the two highly controversial administration bills now before Congress—the Secretary of Agriculture's farm bill and the proposal for a Columbia River Valley Authority—contain provisions which would provide a rigid federal bureaucratic control over the growing and marketing of trees on private property, including many thousands of small farms. On these farms or small wood's operations are 75% of the private forests in the United States.

The general public—and the farmers particularly—will not be alerted to this danger if they can only depend on what has been published, up to this date in the newspapers of the country. The leadership in this industry has good cause to take a stand, individually or as groups.

It didn't take long for the metropolitan New York Times—which is 3,000 miles away from the Columbia Basin—to come out in favor of the CVA, apparently unconcerned over these socialistic provisions. We note that federal bureaucrats and the administration supporters in state offices, who are all a part of the vast bureaucracy, have swarmed to Washington—at taxpayers' expense—to testify in favor of the CVA. However, elected governors of four Far West states have come out against the bill as it now stands. This should give the real democrats of this nation something to think about.

Republican Senators Wherry of Nebraska and Cain of Washington have introduced S. 1988, the Valley Authorities Referendum Act of 1949, to provide for the holding of referendums among the citizens of the states to determine their wishes with respect to establishment of valley authorities which would include their states. Farmers who want to still have something to say about what they do with the trees they grow on their lands, should have a chance to intelligently weigh both of these proposals—both the CVA plan and the farm bill.

Folks Are Reading More, Anyway

Sometimes the moaning of certain segments in an industry detracts from the facts and figures. And sometimes the industry is moaning so loud that it hardly looks at the figures. Imagine, then, the astonishment of the book publishing industry which the other day woke up to the fact that book production for the first half of 1949 not only equaled 1948 but was 2% ahead! More good news for book paper manufacturers is announcements of three new publishing houses, all with personnel of successful experience.

Devaluation—It Has Started in Finland

Devaluation of the Finnish mark by 17.7% caused some speculation among North American pulp manufacturers as to its effect on the market. Finland's action alone is not expected to have an important general effect, some authorities said, but devaluation of Swedish and British currencies could have a much greater effect on the general market conditions, even imperiling the jobs of many thousands in U. S. and Canada.

In four months of 1949 Finish pulp exports to the United States had dropped 83% and Swedish pulp by 72%. Devaluation by Finland was decided upon as a move to gain world pulp markets.

It is well to remember that the pulp industry of North America is not merely a question of jobs and profits. World War II showed it was very important to national safety and national defense for American nations.

Small Mills Are Doing All Right

A survey of the smaller and non-integrated mills reveals that they are, by and large, much better off than two years ago and in better positions, as of this moment, than many a big operator. While lower cost pulp is one factor it is by no means the big one. The big factor is simply that within the last year or two most of the small non-integrated mills have faced, and gone through, their period of adjustment to a competitive situation.

Specialization and accent on service are the watchwords of the more successful small mills which are doing a very creditable job of competing with larger outfits. It is a development that was postponed by the war, and it looks as if those who predicted the end of the small mill will have to get larger and more flawless crystal balls.

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Paperboard Situation

COMMENTS BY INDUSTRY LEADERS

A U.S. paperboard output in 1949 of about 8,600,000 tons is indicated and "this will be the third largest yearly production the industry has ever had." (Record: 1948—9,502,900 tons).

These were the words of George E. Dyke, president of Robert Gair in his president's report to the National Paperboard Association convention at White Sulphur Springs, West Va., June 27-28. Mr. Dyke is also president of Robert Gair Co., Inc., and chairman of Southern Paperboard Corp. He said:

"During the first half of 1949 our customers have been purchasing on a hand-to-mouth basis, buying only immediate current requirements. Never before have we received so many orders for small quantities calling for quickest possible delivery."

As the industry neared the July 4 holiday, he said, the rate of decline leveled off. He said production was "fairly comfortable" and not low when compared with the 10-year inflationary spiral. "Our salesmen have gone back to work," he declared.

He urged maintenance of raw material stocks "at reasonable levels," saying "we have a duty to cooperate with our suppliers—it is to our interest that they remain in business." To properly service customers in periods of big demand, he said it was necessary to have reserve production capacity in periods of lower demand.

Some other reports:

W. G. Latham, Fort Orange Paper Co., Castleton-on-Hudson, N. Y., urged building up of waste paper inventories and said it was not good for the economy of the country that much waste paper is now being destroyed.

J. A. Auchter, vice president, Kieckhefer Container Co., Camden, N. J., reported a healthy pulpwood outlook with ample for all but the railroad situation "is a gloomy spot" with further freight charge increases sought.

Finley F. Bell, labor consultant, said demands for wage increases have mitigated or have been deferred.

J. C. LaGrua of National Folding Box Co., New Haven, Conn., reviewed subjects considered by his biological control committee and Mr. Dyke urged careful reading of this committee's reports by mill officials for "valuable data."

COMING INDUSTRY MEETINGS

National

National Tech. Ass'n. Fall Meeting—Multnomah Hotel, Portland, Ore.....Sept. 12-16

Wallboard Conference (Auspices N. E. Wood Utilization Council & Harvard U.)—Cambridge, Mass.....Sept. 16

Packaging Institute (11th Annual Meet)—Commodore Hotel, N.Y.C.....Oct. 24-26

Engineers' Conference, Statler Hotel, Boston .....Oct. 31-Nov. 3

Allied Industries' Luncheon Club—Second Monday of month, 12 noon, Commodore Hotel, New York.

Regional

Western Pkg. Exposition—Civic Auditorium, San Francisco..Aug. 9-12

N. Y. Canadian Div. Supt's. Ass'n.—Champlain Hotel, Bluff Point, Plattsburgh, N. Y. .....Sept. 8-10

Empire State Tech. Section—Fraunces Tavern, N.Y.C.....Sept. 13

Miami Valley Supt.'s Assn.—Elks Country Club, Hamilton, O.....Sept. 16

Northeastern Div. Supt.'s Assn.—Poland Spring, Me.....Sept. 22-24

Del. Valley Tech. Section—Spring Grove, Pa.....Sept. 30

Pa.-N. J.-Del. Div. — St. Patrick's Inn, Mt. Pocono, Pa.....Sept. 30-Oct. 1

Conn. Valley Div. Supt.'s Assn.—Red Lion Inn, Stockbridge, Mass.....Oct. 1

So. Eastern Div. Supt's. Ass'n.—Hotel Roanoke, Roanoke, Va.....Oct. 14-15

So. Div. Supt.'s Assn.—Frances Hotel, Monroe, La.....Oct. 24-26

Pacific Chemical Exposition — Civic Auditorium, San Francisco.....Nov. 1-5

Paper Industry Salesmen—Midston House, New York City—Every Monday, 12 noon to 2 p.m.

GEORGE A. BALKO, former assistant to H. E. Whitaker, operating Vice Pres. of Mead Corp., has accepted the position of Resident Manager of the Southern Division of Hudson Pulp & Paper Corp., at Palatka, Fla. This is one of the newer Southern mills, capacity 200 tons daily of kraft pulp and quality kraft papers on a 234-inch trim Fourdrinier. Mr. Balko succeeds Sam Siegel, who, as announced elsewhere in this issue, has moved to New York as Hudson's Vice Pres., in charge of Purchasing.

ABOUT OUR "COVER GIRL"

The slippers and the beret which the young lady seems so happy about in our cover picture this month are both made of dissolving wood pulp rayon and cotton. But they are new rayon products—suede-like in appearance and very durable for hard wear and rough weather. They come in rich shades—red, green, coffee, gray, brown, black — and are inexpensive.

American Viscose Corp., one of the big users of wood pulp which has teamed up with Puget Sound Pulp & Timber Co. in plans for a new rayon wood pulp mill near Ketchikan, Alaska (now delayed a year under terms of timber purchase from the Forest Service), made the rayon used in these new products.

The new fabric is called Norzon. It is a rayon floc which is anchored to a cotton cloth by an electrolytic process resulting in what is known as an electro-coated pile fabric. This gives the beautiful suede-like finish.

Behr-Manning Corp., Troy, N.Y., makes Norzon, using rayon from Avisco.

Coast Pulp for Germany

When S.S. Enterprise sailed from Port Alberni, B. C., recently, with 9,000 tons of unbleached kraft pulp from the new Bloedel, Stewart & Welch mill for Germany, she carried the most valuable cargo ever loaded in that port.

RAMBLINGS OF A SUPT.

In a Tissue Mill — With Counsel For Other Superintendents, Too

By J. O. JULSON

Ex.-Supt., now Gen. Mgr. of Pulp Paper,
B-F-D Div., Diamond Match Co., Plattsburg and Ogdensburg, N. Y.

J. O. JULSON, Gen. Mgr. of Pulp & Paper for B-F-D Div., Diamond Match Co., who gave this outstanding paper at Atlantic City.

A Frank Discussion of Problems in a Pulp and Paper Mill

Here is one of the most unusual papers ever given at a Superintendents meeting. It is packed full of meaty information and sound advice—it is almost qualified to be a guide for superintendents. It is one of the most practical and most widely discussed papers given at the Superintendents convention held in mid-June in Atlantic City, N. J.

The first half of this paper discusses what all superintendents could, or should do, in the field of public and industrial relations.

The second half of the paper deals with operational and manufacturing problems as they were met by a tissue superintendent. It discusses equipment all the way through a pulp and paper mill—frankly and *by name*. Manufacturers' names are used in order to identify the equipment. Although it refers to a tissue mill, the problems are not greatly unlike those of other pulp and paper mills.

This is the case history of just one single tissue mill superintendent—me. For purposes of making a point I may from time to time mention particular equipment by its manufacturer's name. These mentions are intended neither to recommend nor criticize; they are to identify the tools with which I have experience.

If a tissue superintendent had only to make tissue, it would still be a full-time job. But in the new complexities of industrial life, the superintendent must also be an orator, a public relations practitioner, a diplomat in the matter of personnel relations, and a guardian of the health of employes and of the company's property. These chores are as much a part of our jobs as papermaking and I plan to touch on them briefly.

Public Relations

It is plain good business for any large company to be both respected and liked by the community in which it is located. Earning and holding this respect is good public relations; losing it, is the reverse.

Since companies are judged, sometimes unfairly, by the actions and the words of every person they employ, the large spotlight is on the superintendent. You are Mr. Paper Mill and what you say and do is of interest to a great many more people in your town than just your employes and their families. You can ruin the reputation of your company just as surely as you can enhance its standing. It is a tremendous responsibility. In The Diamond Match Co. we are participating more and more in programs intended to weld the friendship of town for factory. In our Oswego, N. Y., match plant we recently held an open house to which the whole city was invited. That we were able to accommodate only 4700 visitors was the fault of time running out rather than lack of interest. There was a noticeable improvement in the feeling of the company for the community.

Twin implements in molding public opinion in your favor are the local radio and the local press. If they are friendly, they will trumpet your good deeds to the world; if they are hostile, they will parade your weaknesses. All of us are called upon from time to time to give talks before local civic groups and other organizations. This "oratory" can be turned into favorable publicity quite easily.

Friends *may* buy your company's products; enemies, *never*. If you will have this in mind at all times you'll find yourself just naturally becoming a good public relations representative for your organization.

Safety Programs and Precautions

The superintendent is the guardian of his employes and of his employer's property.

As most of you have heard or read, our Plattsburg, N. Y., mill suffered a most disastrous fire last winter. The fire started in our roll storage room which was not separated from the paper machine room by a fire wall. Here is what the fire taught us to watch for in case of disaster:

1. Be sure the fire pumps are started. Have someone on duty all the time who is familiar with the starting of the fire pumps and whose job is to start the fire pumps in case of fire. Make sure this man does not get side-tracked in the event of a fire but that he goes to the fire pumps first.
2. Be sure your plant sprinkler shut-off valves are well marked and that a large number of your key personnel know what each valve controls. Sometimes it is advisable to shut off a sprinkler valve during a fire if the water through this valve is being wasted and doing no good.
3. Be sure to maintain good police and good watchman protection around the property during the course of the fire to keep crowds away.
4. Maintain a good first-aid station and if possible provide this first-aid station with a good doctor and nurses.
5. It is very advisable to maintain a supply of hot food and hot drink for men working on the fire job.

It is very good practice to have your fire insurance people review thoroughly with you all the areas in the plant, to find out how you would fight a fire. Fire and disaster strike suddenly and give you no time to prepare—except *before* anything happens.

We consider safety work and first-aid work very closely allied to personnel work and very closely allied to public relations in the community. In the first-aid work we employ a company doctor whose principal responsibility is to take care of injured people from our plant, and whose next important duty is to give pre-employment examinations. We have found it economical to have a company doctor.

In connection with pre-employment examinations, we have very definitely saved money because of the numbers of people applying for employment who have been found to be ailing, and who would have been hired if we had not given them this pre-employment examination.

Our doctor also teaches first aid, since we believe in expert first-aid instruction. We have a nurse on duty the first and second shifts, but on the third shift we use personnel trained in first-aid techniques who care for the person until professional assistance takes over. We have found our standing with the doctors in the community much better since we have an official company doctor.

We employ a full-time safety engineer who also is in direct charge of the first-aid work. He is not responsible to the personnel manager, although their work is closely interlocked. The two men work very harmoniously together. One of the important duties of our safety engineer is to attend compensation hearings and to check on the procedures which the insurance company follows in these hearings. The safety engineer is quite successful in keeping premiums down to a sensible level.

Personnel

The matter of plant personnel can be either the most vexatious or the most pleasant of responsibilities. Even in this modern age when personnel problems are delegated to the personnel manager or other authority, the superintendent is still held responsible for both the efficiency and the happiness of everyone in his mill. Management looks to him for smooth and uninterrupted operation, a task that is at times a great deal more difficult than that of keeping machinery in repair.

In our mill, the job is becoming easier. There is an increasing flow of highly trained technicians and engineers, mechanics and accountants because of the improving techniques of teaching. It is not much of a task to keep these people happy because they are generally happy in their work. They are people who are going places.

The great mass of people in any mill are the "hourly workers." At one time, when plants were smaller and life less complicated, the superintendent was father confessor to each and every one of these employes. Today we have unions with stewards, shop committees, officers and international representatives—as a result, we don't necessarily deal with individuals but, more likely, with committees.

But the fact that labor is organized in our plants today does not relieve the superintendent, or personnel manager, or, for that matter, any executive from the job of considering the employe as a person and not as a piece of

equipment. Probably nothing irritates a worker more than to be ignored. Personal feelings are of the highest importance in human relationships, especially on the job. Fair and really human understanding is more essential than ever.

It is advisable for a superintendent to spend whatever time he can in talking to people on the job, in listening to their problems, their comments and suggestions, and, especially, their criticisms. He will learn a lot and will benefit. There is a great deal of good common sense among the men and women who make industry tick.

TISSUE MANUFACTURE

While tissue was known to the Chinese as long ago as the year 875 A.D. it was not until 1870 that it made its appearance in this country in its familiar roll form. It is relatively new in many of its applications.

Loosely defined, tissue is a paper with a basic weight of 15 pounds or less per ream. This segregates tissue from other papers when compared on a tonnage basis.

However, manufacturing and equipment problems of tissue are not too greatly unlike comparative problems involved in the production of paper of any heavier weight.

The raw materials from which tissue is produced are basically unaltered but there are refinements which deserve mention.

Bleaching of groundwood is one of the newest and one of the most important of the refinements. Although practical processes for doing this job were introduced comparatively recently, the bleached product has become very important—especially in view of growing competition and the high prices prevailing in bleached chemical pulps. Bleached groundwood is a filler and is in direct competition to bleached soda pulp, especially as to price.

Another development, very well known but probably becoming more important in our phase of the industry, is bleached kraft. Bleached kraft, no doubt, will be increasingly used in manufacturing tissues where strength requirements are high.

Another new type of pulp, called semi-chemical, also is being developed. Very little experience data or information on such pulp is available at this time. Possibly, it might be better suited for such grades as lightweight waxing tissues than for soft creped tissues. As time progresses and as work is done on this grade, it will become better known and applications will be found.

A late development in pulp preparation is curlation, a pulp preparation procedure developed in Canada. Very little is known of this procedure at this time except by those people who have used it. The published claims for the pulp, there being a great deal published about it recently in the trade publications, are provocative. No doubt many of you will be checking to see how this type of treatment fits your particular requirements.

A well known type of stock which has been used with great success, especially during the war years, is de-inked waste paper stock. Some mills have been very successful with it. The increased use of wet strength agents makes the selection of waste paper a little more critical. The presence of wet strength agents in the waste paper may be harmful to your operation. Refiners are used to refine de-inked bleached stock—to disperse any remaining traces of ink spots in the stock—with good results, particularly for creped grades.

As to the pulp supply, everyone knows that pulp is plentiful at this time. This abundance makes selective buying possible and gives the consuming mill the pre-war quality-wise and price-wise opportunities, thus assuring the best competitive position.

Recent years have been seen developments of pulp breakers of various types, one of the best known being the Hydrapulper. Use of this type of equipment and similar equipment has made the breaking up of dry pulp a different problem than it was prior to their introduction. No longer is hand feeding of sheets necessary to get pulp into slush form. Some pulp breakers will take bales even with the wires left on them. In running such a breaker, it is simply necessary to cut the wires, dump the bales into the unit, and after the pulp is pumped out, remove the wires from the tub. This practice results in great savings in labor.

The modern pulp breaker does just what the name implies. It breaks pulp up into slush form. It does not refine the stock. A number of operators claim that these breakers do refine the stock, but our experience does not show a degree of refinement anywhere near what is necessary. Even the manufacturer who supplied our units pointed out that we must not expect refinement in the breakers. They are intended only for conversion of pulp into a slush form from dry form.

If a mill is handling air-dry pulp in bale form for a bleach plant, the stock should be carefully examined as it leaves the breaker and is pumped to the chlorinators or the bleachers. If there are unbleached lumps of stock after the bleaching operation has been carried to completion, it is an indication that the stock should have a light treatment before going to the bleach plant.

At Diamond we are fortunate that we do not presently break up dry pulp. Our pulp comes about half dry and breaks up very readily; so we do not have any trouble on this score. The information, however, is given for those operators who find unbleached lumps of stock in their bleached stock.

The next logical step to discuss is the handling of stock after it is in slush form. This handling requires pumps, piping, and chests.

In recent years, the use of tile lining in stock chests has been extremely beneficial, especially when combined with good agitation. The tendency for slime and pitch formations to accumulate in a well-agitated, tile-lined stock chest is remote. It is recommended for assuring clean stock.

Another improvement in mill equipment is in the piping materials. Transite, copper, stainless steel, plastic tubings, glass, and other materials, have greatly improved piping layouts.

An interesting development has been going on recently in some mills. These mills are making their own piping—using stainless steel sheets. We have had no experience with this practice, but it appears to be worth investigating.

Another consideration in the design of a stock system is to make sure there are no dead pockets and no sharp angles on which slime and pitch can accumulate. We have found a corrective for slime and pitch through thorough housecleanings after shtudowns on Sunday morning. Hot water, caustic and Oakite are the basic materials used. Although this procedure takes both money and time, it pays dividends in more continuous and more efficient operation in the week that follows.

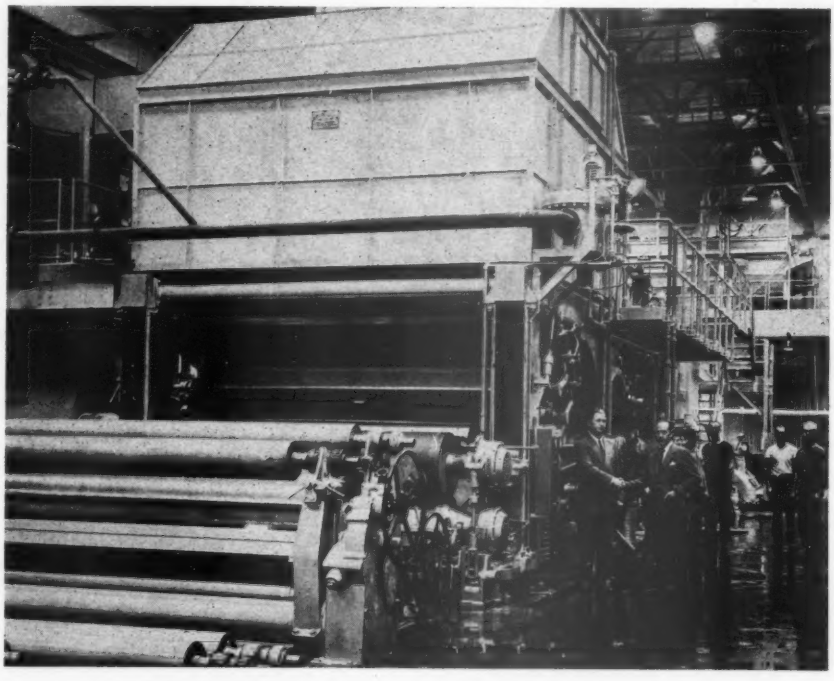
This housecleaning starts at the pulp breakers; and goes right through to and includes the entire stock system, the head box and Fourdrinier section on each paper machine, also the savealls, white-water chest, seal box chest, and any other place where the water gets back into the papermaking system.

(Continued on page 101)

The Experience Which Is Behind This Article

The heading on this article might give the idea that J. O. Julson, the author, is a superintendent. Literally, he is not one, because his title is general manager of pulp and paper for all BFD operations, but he rose through the ranks to this position and his duties are similar, of course, to those of many superintendents.

Born in Pipestone, Minn., Mr. Julson graduated from the Engineering School of the University of Minnesota in 1933. By October of that year he was working as shipping foreman at the Plattsburg, N. Y., mill of the B-F-D Division of Diamond Match Co. He has been there ever since, rising to his present post. A member of the technical association, the superintendents association, and of AMSE, he is active in all Northeast gatherings of mill men and will guide the regional superintendent's meeting in Plattsburg on September 8th and 9th.



SHAKING HANDS ON A JOB WELL DONE are J. O. Julson, General Manager of Pulp and Paper Operations, and (right) Bradford O. Preu, Vice President in Charge of the B-F-D Division of The Diamond Match Co. They are standing in the lee of the new Beloit facial-tissue machine in Plattsburg, N. Y., mill Start-up was the occasion for a civic ceremony.
It is this machine which Mr. Julson talks about in a large portion of the paper which he presented at Atlantic City and which appears on these pages.

MILLS TO OPEN DOORS

Complete Portland Convention Information to be Published Next Month

Doors of all the Pacific Coast pulp and paper mills of all variety and description will be thrown open to the delegates who are going west next month to attend the National Fall Meeting of the Technical Association in Portland, Ore., Sept. 11-15.

This, of course, is in traditional Western spirit and is in line with the hospitality accorded to the visitors from all regions of the continent when the last previous convention of this type was held in Seattle in 1940.

PULP & PAPER'S next issue—the September issue—will carry all important and helpful information about the convention and the Coast industry in a special section of that number prepared and published in cooperation with the official convention committee and the Pacific Coast host section. It will be off the press in late August, in plenty time to reach all mills on the continent before the meeting. Officials of the convention committee conservatively predict at least an attendance of 600.

The official list of the mills which will dust off the welcome mat and swing wide their doors to these delegates will appear in that issue. A brief description of each of these mills will be published—telling of their products and processes and, specially, the chief points of interest in the mill which delegates will want to see.

The final and complete program for all technical sessions and meetings will be published. Also, photographs and descriptions of the famous Mt. St. Helens Tree Farm; the Mt. Hood attractions; hotels, restaurants and places of interest in Portland, with a map; all kinds of other interesting information for tourist-delegates and their wives.

A most interesting collection of reminiscences of the Pacific Coast section of TAPPI, which is the oldest section in the association, will be a feature. There will be distribution of all this information by **PULP & PAPER** at the convention, too.

Ted Tinker To Be Speaker

As this issue went to press, E. W. Tinker, executive secretary of the American Paper and Pulp Association, New York, agreed to address the Portland convention on "The Social and Economic Status of the Pulp and Paper Industry." Also Beloit Machine's Lloyd Hornbostel on new Fourdrinier machines and a Rayonier researcher on cellulose fibers.

In our last issue we published an incomplete list of the papers which will be given at the meeting on subjects ranging from mill design and corrosion in mill systems and sulfite and kraft pulping and papermaking to more general papers on trends in research, education and cellulose use. Here are some later additions to that list, announced as the issue went to press by Dr. Walter F. Holzer, Coast section chairman and program chairman for the convention:

Japanese Pulps and Pulping—H. R. Murdock, Roberts & Co. Associates, Atlanta, Ga. Formerly Chief of Pulp and Paper Branch, Natural Resources Section, Japan.

Corrosion and Corrosion Testing in the Pulp and Paper Industry. R. A. Huseby and M. A. Sheil, A. O. Smith Corp., Milwaukee, Wis.

Hydraulic Barking, A Summary, L. E. Hill, Pulp Div., Weyerhaeuser Timber Co., Everett, Wash.

Paper Mill Design and Construction. J. H. McCarthy, St. Regis Paper Co., Tacoma, Wash.

Opening Remarks by Chairman of Fundamental Research committee. H. F. Lewis, Institute of Paper Chemistry, Appleton, Wis.

Report on Lignin Studies under Pulp Mills Research Project at U. of Washington. D. M. Ritter, and J. L. McCarthy, University of Washington, Seattle, Wash.

A Commercial Method of Isolating Conidendrin from Waste Sulfite Liquor. Homer B. Lackey, W. W. Moyer and W. M. Hearon, Central Research and Technical Dept., Crown Zellerbach Corp., Camas, Wash.

Surface Area of Fibrous Materials Using an Air Permeability Method. J. C. Brown Jr., Institute of Paper Chemistry.

Digester Linings for Soluble Base Sulfite Pulps. E. F. Tucker, Stebbins Engineering and Mfg. Co., Watertown, N. Y.

Progress Report on Magnesia Base Pulping. S. E. Hazelquist, Pulp Div., Weyerhaeuser Timber Co., Longview, Wash.

Beater Additives in Papermaking. D. T. Jackson, Hammermill Paper Co., Erie, Pa.

Effect of Phenolic Resins on Physical Properties of Kraft Paper. P. K. Baird, R. J. Seidl, and D. J. Fahey, U. S. Forest Products Laboratory, Madison, Wis.

Consumers' Ideas on Paper Quality. F. H. Abbott, III, Sunset-McKee Co., San Francisco.

Sulfate Pulping of Old Douglas Fir and Other Mill and Logging Waste, J. S. Martin, U. S. Forest Products Laboratory, Madison.

Centrifugal Clarification of Kraft White Liquor. A. E. Reed and W. F. Gillespie.

Relation of Kraft Pulp Quality to Wood Properties of Douglas Fir. R. N. Hammond and P. S. Billington, Research Dept., Pulp Div., Weyerhaeuser Timber Co., Longview, Wash.

Sources of West Coast Pulpwoods—J. M. McEwen, Research, Pulp Div., Weyerhaeuser Timber Co., Longview.

Chemical Constituents of the Woods. H. F. Lewis, Institute of Paper Chemistry, Appleton.

Pulping of the Woods. K. G. Booth and W. F. Holzer, Central Research and Technical Dept., Crown Zellerbach Corp., Camas, Wash.

Specific Morphological, Chemical, and Physical Properties of Kraft Pulp Fibers. H. F. Lewis, Institute of Paper Chemistry.

Comments on the Springwood and Summerwood Fibers of Douglas Fir. W. F. Holzer and H. F. Lewis, Central Research and Technical Dept., Crown Zellerbach Corp., Camas, Wash., and The Institute of Paper Chemistry, Appleton, Wis., respectively.

"Management's Job Is Selling." Alexander

HOW DR. MURDOCK WAS ENGAGED FOR CONVENTION PROGRAM

The extent to which enthusiastic westerners have gone to arrange a stellar program for the national convention in Portland, Ore., is indicated by the unusual means used to contact Dr. Harold R. Murdock, head of he pulp and paper division of the Natural Resources Section, GHQ of SCAP, in Tokyo, Japan.

The desirability of having him appear on the program was realized by R. M. True, of General Dyestuff Corp. and secretary of the Pacific section. Feeling that it would be of interest to hear about the activities of industry in Japan, the fall meeting program committee indorsed Mr. True's suggestion.

Dr. Walter F. Holzer, Central Technical and Research Dept., Crown Zellerbach Corp., and chairman of the convention program committee, wrote airmail to Dr. Murdock inviting him to appear on the program.

Carl E. Braun, vice president and mill manager of Publishers' Paper Co., Oregon City, Ore., who is also a widely-known amateur radio operator, has frequently been in air-wave touch with station JA2AD, about 28 miles outside of Tokyo. Through Mr. Braun's station, W7HRV, at his home at West Linn, and JA2AD, Mr. True had previously been in contact with H. A. "Gob" Des Marias of an Francisco, who has long been a leader in Coast pulp and paper industry association activities, and who was in Tokyo at this time. Mr. Des Marias was again contacted and commissioned to have Dr. Murdock available at a pre-set time.

On July 6 at 6:00 a.m. Pacific Coast time, and 11:00 p.m. Tokyo time, Mr. Braun was in radio contact with station JA2AD. He called Dr. Holzer at his Camas, Wash., home, making arrangements whereby Dr. Holzer conversed with operators of the Jap station.

While the Tokyo operator's wife conversed with Dr. Holzer, her husband contacted Mr. Des Marias at his hotel and Dr. Murdock at another Tokyo address, thus completing arrangements whereby the three could carry on a conversation linking Camas, West Linn and Tokyo which was 100% all ways.

Some difficulty was experienced in getting Dr. Murdock awakened for the call, due to reluctance of Japanese servants to disturb Americans after they have retired for the night.

As result of this international contact, Dr. Murdock accepted the invitation to appear as speaker.

Dr. Murdock will leave Japan Aug. 4 by ship. He will travel to Atlanta, Ga., in late August, going from there to Portalnd, where he will appear Sept. 14 at the opening general session.

Dr. Murdock is now associated with Robert and Company Associates of 96 Poplar St., Atlanta, consulting and design engineers to the pulp and paper industry.

Mr. Braun and Mr. Des Marais, who is Pacific Coast manager of General Dyestuff Corp., are ex-Navy men and longtime friends who enjoyed the opportunity to exchange greetings by short wave.

R. Heron, Vice President, Crown Zellerbach Corp., San Francisco, Calif.

Economic and Social Status of the Pulp and Paper Industry. Speaker to be announced.

Position of Cellulose as a Chemical Raw Material. L. S. Sinness, Director of Research, Rayon Div., E. I. duPont de Nemours & Co., Inc., Wilmington, Del.

Trends of Research in the Cellulose and Pulp Field. Emil Heuser, La Jolla, Calif.

Problems of Education in the Pulp and Paper Field. John G. Strange, Institute of Paper Chemistry, Appleton.

Special Train Assured

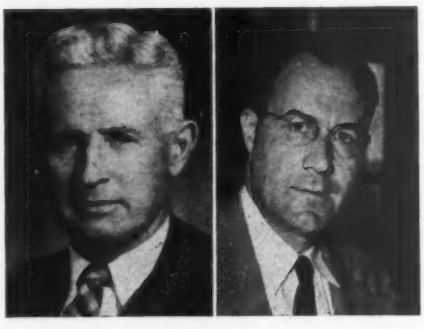
By mid-July an adequate number of reservations had been made to assure a special Union Pacific train for delegates leaving Chicago & Northwestern Station at Chicago 3 p.m. Thurs., Sept. 8, with a day-and-night stopover at Sun Valley and a 1½-hr. stop to view Bonneville Dam on the Columbia River, arriving in Portland 4:50 p.m. Sun., Sept. 11. Requests for train space should be addressed to John C. Pollock, gen. passenger agent, 1 So. LaSalle St., Chicago 3.

Two months before the convention, there were already 140 reservations from the Middle West, East and South—a very good record and fulfilling best hopes of the convention co-chairmen, A. G. Natwick of Crown Zellerbach Corp., and Russell J. LeRoux of Weyerhaeuser Timber Co., and their committees. Requests for hotel reservations should be addressed TAPPI Convention, Hotel Multnomah, Portland, Ore.

Some of those who were johnny-on-the-spot in putting their names on the dotted line include Al Bachmann, vice president of Missisquoi Corp., Sheldon Springs, Vt.; Dr. H. S. Hill, Price Bros., Kenejami, Que.; S. C. Stratton, vice president of Ontario & Minnesota Paper Co., Kenora, Ont.; Dr. Harold R. Murdock, head of General MacArthur's Pulp and Paper division of GHQ of SCAP, Tokyo; Tom Barry, resident manager of Fraser Paper, Ltd., Madawaska, Me.; K. G. Chesley, research director, Crossett Lumber Co., Crossett, Ark.; Ken Geohegan, vice president of Howard Paper Mills, Dayton, O.; Mace Harris, manager of manufacturing, The Northwest Paper Co., Cloquet, Minn.; C. J. Johnson, Pollock Paper Corp., Dallas; Martin Schnaufer and Gordon Morseth, Detroit Sulfite Pulp & Paper Co.; A. M. Ream of Ecusta Paper, Pisgah Forest, N. C.; George H. McGregor, research executive of Minnesota & Ontario Paper Co., International Falls, Minn.; Kermit E. Olsen, chief chemist, National Container Corp. of Wis., Tomahawk, Wis.; John Spalding, Marathon Corp., Menasha, Wis.; L. T. Summers of Port Huron Sulfite Paper Co., Port Huron, Mich., and R. H. Stevens, technical director, National Container Corp., Jacksonville, Fla.

Others from the eastern offices of allied industries who were among the very early ones to make their plans known include:

L. M. Start and C. S. Adams of Rice Barton Corp.; Joe Scheuermann, Cameron Machine; R. L. Kutter, John Hamm and Ned Root, Black-Clawson, Shartle, Dilts organization; E. A. Ellis, Downington Mfg.; Harry Moore and Elmer Macklem, Beloit Iron Works; Richard Temple, Moore & White; Charles H. Vickery, E. D. Jones & Sons; R. E. Bergstrom, Swenson Evaporator; Olin Callighan, Edgar Bros.; Tom Gillespie, Cheney-Bigelow and Lockport Felt; and Tom Toovey, Cheney-Bigelow; J. W. Hemphill, Johns-Manville; L. G. Durant, Paper & Industrial Appliances; Ivar Ekholm, National Analine; N. M. Bixby, J. A. Foxgrover and H. LL. Mellen, Hercules Powder Co.; R. W. Kumler and J. M. Walsh, American Cyanamid; L. E. Fletcher, A. E. Montgomery and W. K. Metcalfe, Ross Engineering; J. P. Gerhauser, Appleton Wire; G. A. Hermann, Hermann Mfg. Co.; J. M. Kahn, Infilco; Roy Johns, Freeport Sulphur Co.; R. A. Huseby and M. A. Schiel, A. O. Smith; J. P. Roche, C. P. Robinson and Harold Wood, Heppenstall Co.; George Spencer, Torrington Co.; J. P. Strasser, Stein-Hall; Carl Richter and E. F. Tucker, Stebbins; H. F. R. Weber, Link-Belt Co.; H. R. Wemple, Texas Gulf Sulphur Co.; W. S. Yunker and N. O. Ehrisman, Foxboro Co.; W. R. Willetts, Titanium Pigment, and Ray Shillum and Martin Hutchinson, Brown-Hutchinson Iron Works. This was just a beginning, of course, and more were signed up almost every day.



R. LINDLEY MURRAY (left), Executive Vice President of Hooker Electrochemical Co., of Niagara Falls, N. Y., and Tacoma, Wash, was recently signally honored by being awarded the Schoellkopf Medal of the American Chemical Society, which is one of the outstanding awards for chemical achievements

DR. WARREN L. McCABE (right), recently elected Vice President and Director of Research of The Flintkote Co., which also recently built a modern research laboratory at Whippany, N. J., where a program of activity will be directed by Dr. McCabe. He was head of the Department of Chemical Engineering for 10 years at Carnegie Tech prior to joining Flintkote as Director of Research in 1947.

Argentina Wants Offers To Build Newsprint Mills

Argentina is anxious to establish a newsprint industry and is inviting public tenders from industrialists who may wish to invest.

A cellulose plant is now under construction in that country, but no attempt has been made to produce newsprint. Raw material would be native pine. Argentina imports about 170,000 tons of newsprint annually.

Paper & Twine Officers

The Paper & Twine Association convention at French Lick Springs, Ind., in June elected Robert E. Knox, Knox & Schneider, Chicago, president; Lewis H. Sisson, of Cincinnati, western representative of Racquette River Paper Co., vice president, and John L. Richey was renamed secretary-treasurer.

New Bowater Research Body; Headed Up By Vic Sutton

Victor J. Sutton (left), assistant mill manager of the big Bowater's Newfoundland Pulp & Paper Mills, Corner Brook, Nfd., has been promoted to the parent company The Bowater Paper Corp., Ltd., London, to be executive director of a new subsidiary—Bowater's Development and Research, Ltd. It will administer three divisions—Planning and Development, Research and Central Engineering. Activities will embrace all branches of Bowater in England, Scandinavia and North America.

This picture of Mr. Sutton was taken by **PULP & PAPER** recently in Newfoundland. He was born on Grand Manitoulin Island, 40 miles from Espanola, Ont., and started in research at the Iriquois Falls, Ont., mill. He helped organize the technical department at the Mersey mill in Liverpool, N. S., then rejoined Abitibi company at Beaupre, Ont., where he was assistant to Manager Dan Dupuis before going to Corner Brook. He and his family were leaving for England in late July.

16,500 Wisconsin Employes Get Facts on Pollution

More than 16,500 Wisconsin employes of the pulp and paper industry are receiving a small illustrated pamphlet, "Pulp, Pollution, People & Fish." This is an effort by the industry to put into a 10-minute capsule of simple, non-technical language the complex research problem on waste disposal which a 13-man scientific staff maintained by the sulfite pulp industry is studying in Appleton, Wis., and Rhinelander, Wis., laboratories and pilot plants, and in the full-scale experimental yeast factory at Rhinelander. The foreword says:

"Folks who earn their living in pulp and paper have more at stake than many other people who are most active in the pollution controversy. After reading it, you will know more about stream pollution than do many of the people who talk most about it."

The booklet reports on five research projects: Fodder yeast; vanillic acid; evaporate-and-burn; road binder; and, magnesium oxide pulping. The Sulfite Pulp Manufacturers' Research League, which includes 12 companies with 13 Wisconsin mills and one in Michigan, paid the bill. The report concludes: "The situation is really hopeful. More progress has been made since 1939 than in all previous years. Industry research seems close to several good answers—closer than even one answer ever seemed before. But nobody can be sure of any project until it has been checked, tested, and proved either a success or a flop."

BOARDWALK MEETING

HIGH SPOTS AT ATLANTIC CITY

CHARLES H. REESE (left), Vice Pres. in Charge of Manuf., Nekoosa-Edwards Paper Co., Port Edwards, Wis., moved up to President of the Supts. Association. F. A. SODERBERG (right) of General Dyestuff Corp., New York, became Chairman of the Affiliates.

Future historians of the industry will have to record that the first chemical coating method on machine coating equipment took place on June 15, 1949, at Atlantic City, N. J., where there is no paper mill.

This phenomenon was due to the fact that D. Robert Erickson, consultant of Kalamazoo, Mich., inventor of the new coating process involving ion exchange, and Ben R. Newcomb, president of The John Waldron Corp., cooperated to give a practical demonstration of the coating which had heretofore (see pages 42-44, June **PULP & PAPER**) been merely the subject of discussion. The demonstration on machine coating equipment took place in Haddon Hall Hotel during the 1949 Superintendents Convention. First demonstration was a 10-pound coating on colored kraft to show covering power of the new experimentally tested process. Subsequent samples were on stock normally coated for printed surfaces.

At the same time, down the hall in another room, a Wood Room and Woods Operation session was hinting at possibilities of the first practical power chipping in the forest, a theory that has raised its head periodically for many years but which now seems close, at least in certain areas.

Paper by Julson Was Outstanding

These two developments were perhaps the most new and interesting entire sessions at the convention. Among individual papers there was an exceptional one. J. O. Julson, now general manager of pulp and paper for the B-F-D division of Diamond Match Co., gave an unusual paper, one of the most practical and a paper of the widest appeal entitled, "Ramblings of a Superintendent." His paper detailed significant facts about all the new and modernized pulp and paper operations in his company plant. He cited equipment by name, telling why it was selected to do a job. Rarely is such a comprehensive and frank discourse available. Besides, he talked also about the superintendents' responsibilities—not only in selecting equipment and running an operation, but in public and industrial relations, too.

We have selected this paper from the many given at Atlantic City to publish in full on page 33 in this issue.

The Attendance

Less than 100 mill men from about 63 pulp and paper companies were in attendance, but support of the affiliate members brought total attendance to something over 600. What the convention lacked in numbers it made up in enthusiasm, extremely close attention and a very comprehensive program.

Throughout the sessions, there was an air of earnestness and sincerity in awareness of the paramount industry problem of maintaining and improving quality in mill production in order to meet present-day market conditions.

The Coating Session

The coating session had no trouble at all competing with the beaches, the sunshine, and the excitement of the boardwalk of the exciting Jersey resort metropolis. For this was something new. Less than two months before, the industry had witnessed its first national conference on coating at Grand Rapids. At that time the prophets predicted another national coating session for Paper Week of 1950 in New York. Then along came this coating group meeting of the superintendents with the full dress demonstration of the ion exchange method, plus—and it was a big plus—such experts as these: H. O. Ware, Hercules Powder Co., on "Casein as a Machine Coating Binder;" Dr. J. E. Killinger, Penick and Ford, Ltd., on "Cooked Starch as a Machine Coating Binder;" W. L. Craig, R. T. Vanderbilt Co., on "Enzyme Converting of Starches for Paper Coating Use;" Walter Bain, The Glidden Co., on "Alpha Protein as a Machine Coating Binder;" Dr. E. K. Stilbert,

CHAIRMEN and LEADERS (l. to r.): FRANK F. FROTHINGHAM, Bird Machine Co., retiring President of the Affiliates; GORDON SINGLETARY, Brunswick Pulp & Paper Co., now fourth Vice President of Supts. Ass'n., led Mill Maintenance session; GLEN SUTTON, Sutherland Paper Co., third Vice President; and VANCE EDWARDES, International Paper Co., Co-chairman of sulfite conclave, who presented his, "Trends In Sulfite Pulping."

PRESENT AT SUPTS. MEETING (l. to r.)—DONALD DICK, of Howard Smith Paper Co., the only newly-elected Vice President of the Association, and as Fifth Vice President in line to succeed eventually to Presidency. BRAINERD E. SOOY, Gardner Board & Carton Co., Chairmanned Coated Papers session; CARLO VICARIO, of Clark & Vicario, New York, studying program; GLEN RENEGAR, Container Corp. of America, skippered Board session.

EARL BRYDGES (left), was featured speaker at general session of Supt.' Convention. He is New York State Senator, and son of WILLIAM A. BRYDGES (right), a former President of the Supts., and now a National Trustee.

Dow Chemical Co., on "Synthetic Rubber Latex as a Machine Coating Binder; and Mr. Newcomb on "The Place and Future of Machine Coating in the Industry." To harness the experts and the floor discussion the superintendents picked Brainerd E. Sooy, Gardner Board and Carton Co., as chairman; and A. C. Dreshfield, consulting chemical engineer, as moderator. To cap the climax there was a special souvenir program for this session, printed on coated cover stock made by Gardner Board and Carton of Middletown and Lockland, O.

An interesting point about the coating session was that the papers were all very brief and admittedly non-technical, written not to exhaust the subject but rather to inspire discussion from the floor. The discussions came off, too, and the questions were pointed.

Mr. Ware was asked if, should casein prove entirely practical in the coating field, would there be sufficient supply. Mr. Ware believed that there would be; that the tapering off of certain government programs in areas of agriculture and industry competing for casein would mean that the product would seek a normal market condition or level.

Dr. Stilbert was asked how to remove latex after it had "set" in vats or on a machine or in piping. Proper use, he said, was the guarantee against setting in pipes and prior consultation with the suppliers would be proof against this. Only methods of removing it from other spots was, he stated, by manual "pulling" or — where practical and safe — by blow-torch. Certain detergents might aid in the pulling process, he told the audience.

Certain basic over-all facts came to the surface through the discussions. Impregnation is different from simple coating; impregnation means "down in the sheet and in the fibers." And coating is never a substitute for proper formation on the machine—coating does not solve all the problems of papermaking—in fact, the same old problems are still there plus the new one: coating! And this, the discussion pointed up, meant that there would have to be plenty of cooperation, plenty of information exchange, among pulpmen, suppliers, equipment manufacturers, and the papermakers.

In Mr. Erickson's discussion of what he termed " a new method of coating paper involving ion exchange," he pointed out the simple terms of difference. Mr. Erickson said: "Most improvements have been physical; this process is chemical. Is not coating much the same problem that we have on a new house where we use paint to cover the raw lumber and give a standard bright opaque smooth surface? Or the problem in printing a sheet of paper with various color inks to cover one color with another? The idea is to apply a liquid that can be easily handled and, when applied, transforms from liquid to solid. This happens in paints and inks, due to oxidization or polymerization of the oils. Could a comparable method be used in coating papers?" The answer, said Mr. Erickson, is yes.

Mr. Erickson Explains Process

After reviewing the "mechanism of present-day coatings" he stated that the principle of the chemical process lies in the fact that "certain hydroxy alkyl ethers of cellulose are selectively soluble only in a critical concentration of aqueous sodium hydroxide and in no other solvents. These ethers are suitable as adhesive binders for clay and other pigments. They are linear polymers of high molecular weight, are capable of forming self-supporting inherently flexible films and have extremely high adhesive properties. They can, therefore, be used in very small amounts.

"Because they are soluble in only one solvent," said the inventor, "it can easily be seen that any unbalancing of this solvent equilibrium will precipitate the ether or binder from its solution. Therefore, it is possible, by either increasing the sodium hydroxide concentration, or by decreasing it or by exchanging the sodium ion of the sodium hydroxide for any other ion, to immediately change a fluid solution to a non-tacky solid." He went on to say:

"When a coating mix is made using such an adhesive for the binder, the formula would consist of clay or other pigment, dilute aqueous sodium hydroxide as the solvent and a small proportion of the hydroxy alkyl cellulose as the adhesive. Immediately after coating the rawstock with such a coating, by any suitable coating machine, the wet surface is contacted by a dampening roll or other suitable method of wetting, with a solution of a neutral or other salt that will simultaneously precipitate the HAC from solution by ion exchange, including the clay or other pigment in the smooth precipitated film and also neutralize the sodium hydroxide of the solvent and bring the pH of the coating to any desired end point.

"The excess of the precipitating and neutralizing salt solution together with excess water of the original coating are removed by passing the sheet through squeeze or press rolls, such as are used on a size press. The caustic of the solvent does not harm the rawstock in any way as it is neutralized almost at the same time that it is applied. By ion interchange of the sodium ion of the sodium hydroxide for some other ion of the salt used to precipitate and neutralize, no acid is necessary for neutralization to cause excess acidity that would be deleterious to the rawstock."

The former ink expert and *Time-Life* man went on to state that the chemistry of the process is a simple one, that the coating may be applied to the coating rawstock by any of the known methods, but preferably by a method that does not apply a pattern. Immediately after the coating is applied, it is contacted with an aqueous solution of a salt capable of ion exchange with the sodium hydroxide present in the coating.

When the demonstration took place on the machine which had been completed just in time for the convention it was easily seen, as Mr. Erickson pointed out, that following the contact, "all excess setting solution and some of the water in the original coating is squeezed out by passing the sheet between two rollers, one of which has a somewhat resilient surface. A normal size press is very suitable for this operation. The sheet is then dried, preferably in contact with a drum dryer or a series of paper machine dryer rolls. This drying under tension is important to eliminate cockle from shrinkage The finished dried sheet is level in surface contour to the extent that it does not have to be calendered.

"Speed at which this method of coating can be used is entirely dependent on the mechanical capabilities of the coater and drying units. The time necessary for the ion exchange to take place is so short that it need not be taken into consideration on speed of coating," Mr. Erickson told the session.

The process is ideally suited for "on the ma-

Rittenhouse Mill Marker Now Stands in Philly Park

Now there is a plaque marker at the spot where the famous historic Rittenhouse paper mill was built in what is now Fairmont Park, Philadelphia. The mill, six miles north of downtown Philadelphia, stood on Paper Mill Run and was built in 1690 by William Rittenhouse and his son, Claus.

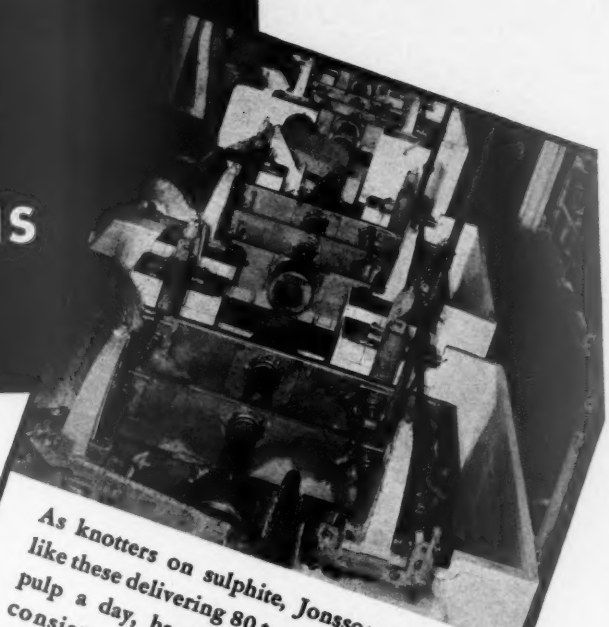
The Superintendents association presented the marker to the City of Philadelphia in a brief ceremony in June and it is shown in the above picture. Among participants were those above (left to right): Fred C. Boyce, first active president of the association and a trustee for many years; Ollie W. Messner, who this year completed his term as president, and Raymond L. Barton, of Plainwell, Mich., a past president.

Harry E. Weston, associate secretary-treasurer of the association, promoted the idea of the marker and it was through his personal diligence and investigating efforts that the historic information was gathered and the plan was pushed to completion. Mills in the Pennsylvania-New Jersey-Delaware area contributed necessary funds.

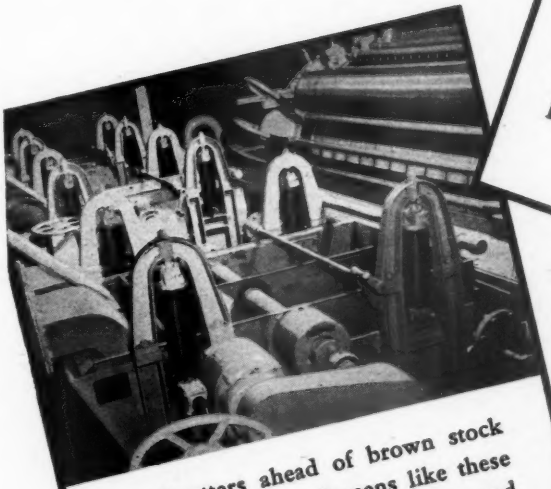
A number of descendants of the Rittenhouse family and Philadelphia officials were on hand.

The beginning of this dedication really began years ago when Harry E. Weston, associate secretary of the body, tried to find the old site of the mill. Unable to locate it, and failing to discover any passing Philadelphians who knew of it, he resolved that one day a marker should reveal the place for posterity. Fittingly, he was in charge of the dedication ceremony in June.

Here's What BIRD JONSSON SCREENS Can Do For You



As knotters on sulphite, Jonsson Screens like these delivering 80 to 100 tons of clean pulp a day, handling stock up to 1½% consistency; on groundwood and kraft they're delivering 150 tons or more and handling stock up to 2½%.



As knotters ahead of brown stock washers, Jonsson Screens like these are increasing washing efficiency and economy and assuring vacuum maintenance and maximum recovery of black liquor. Foaming is no longer a problem.

On waste paper stocks, Jonsson Screens like these are just the ticket for removing wet strength paper, cellophane, string, paper clips, rubber bands or what have you. Tailings loss is negligible. Capacity is great.

Full information on any or all Jonsson Screen applications may be quickly obtained from

BIRD MACHINE COMPANY
South Walpole, Massachusetts

chine" coating especially on machines that already include a size press, he claimed. The press can be used for setting or precipitating the coating and squeezing out the excess water. An applicator roll and air ductor can be placed just ahead of the press rolls. The process is said to be ideally suited for simultaneous double side coating.

Chipping in the Woods

The subject of chipping in the woods cropped up at the session on Wood Room and Woods Operations, chairmanned by Harry Weston, assistant secretary of the association, pinch-hitting for James Fish of Brown Co. He had as co-chairman a veteran pulpwood and chipper-knife man, C. P. Robinson of Heppenstall Co. Featured were "Current Issues in Chipper Design" by C. R. Wardwell, Carthage Machine Co.; "Latest Developments in the Production of Pulpwood" by W. S. Bromley, forest engineer of the American Pulpwood Association; and a movie called "King Spruce" sponsored by Brown Co. and illustrating in technicolor their woodlands operations.

In the discussion of the papers by Mr. Wardwell and Mr. Bromley it developed that at least one, and possibly two, equipment companies were very near to developments in woodlands chipping, by Diesel power, and might soon have practical installations bought by mills. As one participant in the discussion said, "This idea crops up every five years or so. It becomes particularly insistent in a period of rising wood costs or when, as now, more competitive business requiries cost cutting at every point. Chipping in the woods, in areas where peeled wood is obtainable, is very practical—but debarking in the woods is something else again."

Some of the screen people and chipper manufacturers were, naturally, not quite in complete agreement as to the feasibility of eliminating chip screens with the use of a multi-knife chipper. One screen manufacturer's representative pointed out that, "chippers take a terrific beating. A few months after installation they are not quite the efficient machine that left the factory—and this is no criticism of the fine chippers made today. But screens are still a necessity."

C. R. Wardwell On Swedish Results

Mr. Wardwell, in a masterly discourse, pointed up the advantages of a ten-knife chipper over the four-knife types. He said that tests in a mill near Sunsvall, Sweden, made 27 cooks spaced within their regular schedule and came up with announced savings of 1½% on wood costs through reduction of fines, and digesters 10% higher in production due to better packing of more uniform chips. Since then, Mr. Wardwell said, other tests throughout the world have backed up the Sunsvall results, and one eastern operator computes it as $1.31 per ton of pulp better than chippers with fewer blades.

C. B. Newell, field engineer for Simonds Saw and Steel Co., talked on care and use of chipper knives, emphasizing that proper grinding is the key to maximum chipper efficiency. He discussed types of grinders, coolants for grinding (water is best), and burns. While Mr. Newell's paper was a relatively simple discourse it was on a subject long neglected as basic in uniform productive chip making.

Sulfite Pulping

Perhaps the broadest session at the 1949 conclave was the one on sulfite, chairmanned by Donald A. Hunter, B-F-D division of Diamond Match, and Vance P. Edwardes, International Paper Co. The board of experts was formidable: H. Karberg, Alliance Paper Mills; E. F. Tucker, Stebbins Engineering Co.; Roy Davis, Detroit Sulfite Pulp & Paper Co.; Harold Skinner, Marathon Corp., and Luther Beighey, Hammermill Paper Co.

ATTENDING SUPTS. MEETING (l. to r.):
PHILIP J. HANNAN, Southern Advance Paper & Bag Corp., led Kraft session; PAUL EASTON, Bulkley, Dunton Pulp Co., on panel for Board session discussions; DR. E. K. STILBERT, Dow Chemical Co., presented paper at Coating group meeting; CHARLES ACKLEY, of Crown Z, West Linn, Ore., now second Vice President of association.

Mr. Edwardes' "Trends in Sulfite Pulping" was the springboard for the discussion. A vital point: In viewing the swing to kraft, it should be noted that large kraft tonnages are used in fields which sulfite never entered and are replacing wood and metal rather than sulfite. Mr. Edwardes also invited attention to the fact that regarding the pines, there is some possibility that a recently developed acid stable pitch solvent emulsion may permit satisfactory pulping of this class of wood for paper grades.

On the all-important problem of waste liquor recovery Mr. Edwardes said, "The problem is difficult due to the relatively low concentrating of solids in waste liquor and the difficulty of economically recovering either sulfur or calcium in usable form. The tonnage of solids is staggering and the only solution which appears at present is utilization at the point of origin . . . The production of evaporated liquor or dried powder, alcohol, yeast and other products has only scratched the surface. In Scandinavian countries with fuel high priced and scarce, a number of plants are evaporating and burning waste liquor for the fuel value only . . . The use of sodium or ammonia as the base offers certain pulping advantages but as far as is known now, satisfactory recovery systems are not being operated. In conjunction with a kraft mill, the sodium waste liquors from a sulfite mill could be recovered in the kraft evaporators but the kraft production would have to be several times greater than the sulfite."

Among the other subjects discussed at Atlantic City were graphic arts—"Don't be afraid of the title," said Co-chairman Fred A. Soderberg, "we're only going to talk about printing!"—which was guided by Robert W. Pattison, Cellulose Fibres, Inc.; the kraft session, with Philip J. Hannan, Southern Advance Bag & Paper Co., Hodge, La., and Allen Hyer, Bagley & Sewall, in charge; the power session, headed up by Roland Packard of Bagley & Sewall and C. D. Cummings of SKF; the board discussions, chairmanned by Glen Renegar, Container Corp., and Walter B. Morehouse of NOPCO. This latter session had a panel of Paul Easton, Bulkley Dunton Pulp Co.; T. A. McArn, Downingtown Manufacturing Co., and S. T. Weber, Black-Clawson Co., moder-

PHOTO BY PULP & PAPER shows new coating equipment. (Left to right)—C. A. Dickhaut, D. R. Erickson, and Ben Newcomb, Pres. of John Waldron Corp., with the specially made model coating machine demonstrated at the Superintendents convention.

YES ...GO WEST!

Plan now to attend

TECHNICAL ASSOCIATION • TAPPI • PULP & PAPER INDUSTRY

TAPPI FALL MEETING

PORTLAND, OREGON
SEPTEMBER 11-15

BELOIT IRON WORKS PAPER MACHINERY BELOIT WIS. U.S.A.

BELOIT IRON WORKS

BELOIT, WISCONSIN

ated by Phil Goldsmith of Puseyjones, on "Approach Flow and Factors of Vat Design for Uniform Formation and Weight Distribution."

The Fine Paper and Tissue Session was headed up by J. O. Julson, B-F-D Division of Diamond Match (his interesting paper follows this article); James Rogers II, J & J Rogers Co.; and was to have had Charles Vickery, E. D. Jones & Sons, as co-chairman, but he was called home by the illness of his wife. Featured were papers by E. E. Thomas, Appleton Machine Co., on "The Modern Supercalender" with a movie film. "Electroplating for Paper Machinery" by C. H. Belvin, Chromium Corp., and "Production of Mold Resistant Paper and Board" by William D. Stitt, Buckman Laboratories.

Mill maintenance came in for important attention under the chairmanship of Gordon Singletary, Brunswick Pulp and Paper Co., who introduced William P. Jordan, Ecusta Paper Corp.; George H. Spencer, The Torrington Co., and C. P. Spalding, Beloit Iron Works.

On Friday following the final general session there was a discussion group on Materials Handling built around a talk with pictures and movies by Matthew W. Potts, materials handling consultant. With many examples of materials handling, chiefly from west coast mills, Mr. Potts emphasized the growing importance of this phase both in handling supplies and finished products.

New Officers Take Over In Supts. Association

"If a superintendent had only to make paper, it would still be a full time job. But in the new complexities of industrial life the superintendent must also be an orator, a public relations practitioner, a diplomat in personnel relations, and a guardian of employe health and of company property. Such chores today are as much a part of our jobs as papermaking."

Thus spoke J. O. Julson, B-F-D division, Diamond Match Co., during the Superintendents convention at Atlantic City in June.

And mindful of this truth and the future before them, the officers moved up a notch in the succession, Charles H. Reese, vice president of Nekoosa-Edwards Paper Co., who became president, and James Fish, Brown Co., who succeeded him as first vice president. Other officers for 1949-50 are: Charles E. Ackley, Crown-Zellerbach Corp., second vice president; Glen Sutton, Sutherland Paper Co., third vice president; Gordon Singletary, Brunswick Pulp and Paper Co., fourth vice president.

The new fifth vice president is D. R. Dick, Howard Smith Paper Mills, Ltd., and he is now in line to be the second Canadian prexy in the history of the association, the first being Brydon D. Millidge in 1938.

The association gave a vote of thanks to Ollie W. Messner, Empire Box Board Co., for piloting of the association as 1948-49 president. F. A. Soderberg, General Dyestuff Corp., became chairman of the Industrial Affiliates, succeeding F. F. Frothingham, Bird Machine Co., who officiated this year. Allen Hyer, Bagley & Sewall, moved up to the first vice chairmanship. The important get-together party which tops all annual conventions was expertly engineered by Norman O. Weil of W. S. Tyler Co.

Outstanding as always among the attendance were those rugged trustees of the national group: William H. Brydges, Fred C. Boyce and Killey E. Terry.

AT ATLANTIC CITY:

Top—(l. to r.): ALBERT A. NYITRAY, Eastwood-Nealley Co.; J. W. HAWTHORNE, H. T. McCluskey & Sons; JACK LOOMIS, Calco Div. of American Cyanamid, at Haddon Hall where meetings were held.

Center—W. A. KOSICKI and W. B. SHERMAN, Newport News Shipbuilding Co., watch boardwalk parade.

Bottom—C. F. KINGSTON, Hammermill Paper Co.; and MR. and MRS. NORMAN WEIL, who planned the Get-Together party which Mr. Weil chairmanned.

Phil A. Howard, Editor, Merchants' Friend, Dies

Phil A. Howard, president of the Howard Publishing Co. of Chicago and editor and publisher of American Paper Merchant, died June 24 in Chicago. He was 70.

Widely known among merchants and salesmen in the paper field in all sections of the country, he also published the convention dailies at "Paper Week" in New York each year, maintaining headquarters in the Waldorf-Astoria, also the magazines American Paper Converter and American Boxmaker, and SOS Directory.

Mr. Howard was a widower, his wife having been fatally injured a few years ago in a railroad crossing crash on the Indiana shore of Lake Michigan after driving him to his Chicago commuters' train from their lake home "The Collonades." For years the Howards had traveled far and wide to paper trade group meetings and he recently had made a trip into the South. A son and daughter and two brothers survive.

Important Personnel Changes In Hudson Pulp & Paper

Hudson Pulp & Paper Co., which in July moved its headquarters from the Daily News Building in New York to 505 Park Avenue, has announced a number of important personnel changes. Charles Grondona, well known in both the west and east coast industry, is manager of operations for all mills, and Anton Lund, vice president, is in charge of plants engineering and development.

Sam Siegel, formerly resident manager at the Palatka, Fla., kraft mill, has been transferred to the New York office where, as a vice president, he will be in charge of insurance and purchasing for all plants.

Replacing Mr. Siegel at Palatka is George A. Balko. He comes to Hudson Pulp & Paper from Mead Corp., Chillicothe, O., where he was assistant to H. E. Whitaker, operating vice president. A graduate of Stevens Institute, he has been a superintendent of various mill operations departments, general superintendent and division manager for Consolidated Paper Corp., Ltd. Just prior to joining Mead he was in charge of the mill of the Manitoba Paper Co., Pine Falls, Man. At the close of the war he was with the Army in Europe, with Mr. Grondona, directing the operation of a number of paper and converting mills for rehabilitation and paper procurement.

Recently the Palatka operations added 100,000 square feet to their converting and storage facilities in the shape of a two-story brick and steel building adjoining existing storage structure.

Hudson operates mills at Palatka, Fla.; Augusta, Me.; Lansdowne, Pa., and Bellows Falls, Vt.

Moore & White Co. Buys Syco Corp.

The Syco Manufacturing Corp., of Syracuse, N. Y., makers of paper machine drives, has been bought by the Moore & White Co., of Philadelphia, manufacturers of papermaking machinery since 1885.

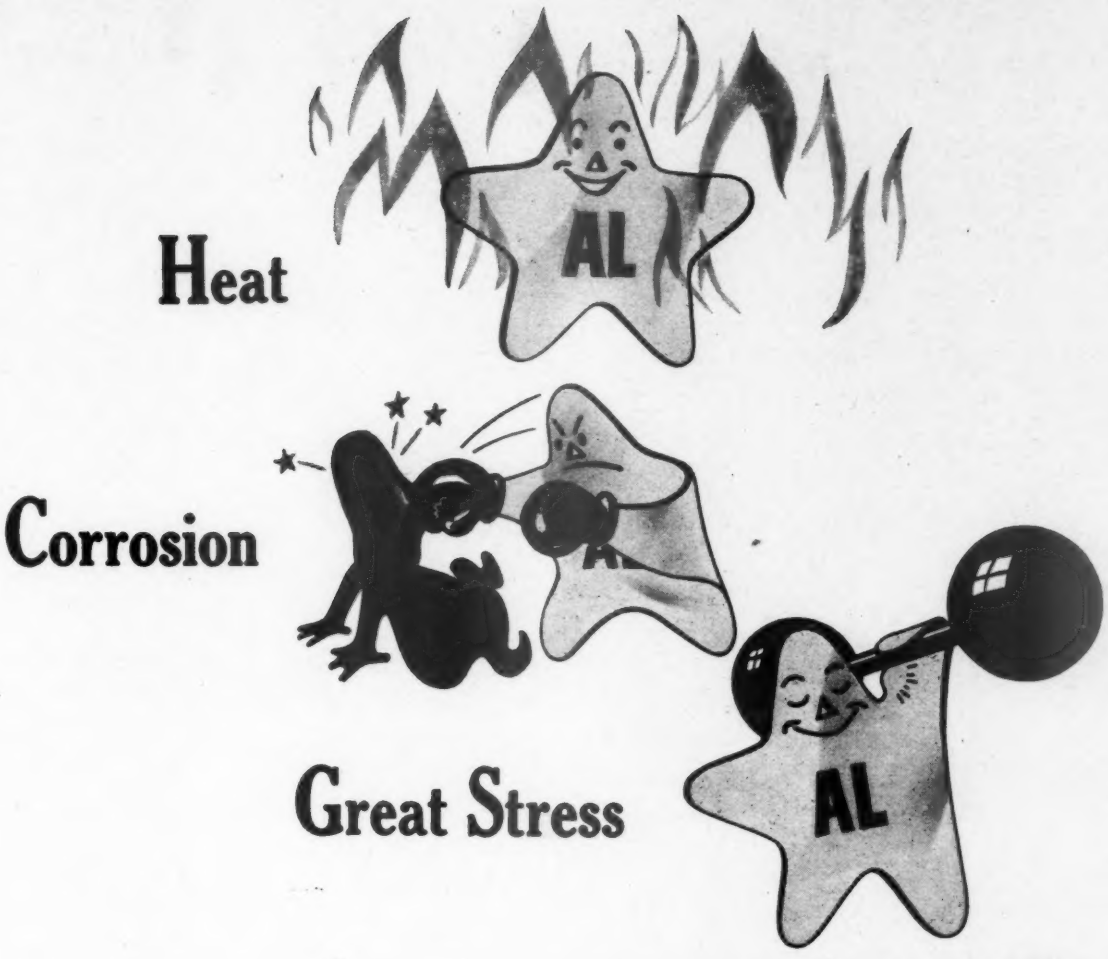
In announcing the purchase, George Lear, Moore & White president, said the well-known Syco drive was a logical addition to his firm's line, and permitted the company to satisfy every important machinery need of its customers.

Harry E. Smith, chief sales engineer for Syco, has joined the Moore & White staff as a sales engineer.

The Syco drive will be manufactured in the Moore & White plant. The unit is self-contained and compact. No equipment is needed below or above floor level.

Fox River Cities Get Orders

The Wisconsin State Committee on Water Pollution ordered six municipalities on the Fox River to complete adequate sewage treatment and disposal plants by dates between the end of 1949 and mid-1951. Paper mills are ordered to tie in with these systems when available. Pulp mills were also ordered to submit plans.



—they all look alike to ALLEGHENY METAL

In the new ALCOHOL PLANT at Gatineau, Que., it's ALLEGHENY METAL

We were privileged to supply large quantities of Allegheny Stainless Steel for equipment in this highly modern and advanced plant for the production of alcohol from sulfite liquor. We congratulate all concerned—owners, builders and fabricators of equipment—upon its successful completion and entry into commercial use.

A lifetime servant that can stand up to your job—practically under *any* conditions of heat, corrosion and wear—that's what you get when you specify Allegheny Metal. Great strength and resistance to chemical or atmospheric corrosion . . . rugged ability to take a beating . . . bright, shining beauty and endless ease of cleaning . . . they're all yours with this time-tested stainless steel.

Your first cost is practically your last, too. The odds are that no other metal can do your job quite as well as stainless steel. No other metal looks or lasts quite as well while doing it. And certainly no other metal offers more in the way of cutting maintenance and depreciation costs!

● If your equipment has to take it on the chin in countless ways, *insist* on Allegheny Metal—the pioneer stainless steel—*it has what you need!*

ALLEGHENY LUDLUM STEEL CORPORATION
Pittsburgh, Pa.

Nation's Leading Producer of Stainless Steels in All Forms

AL

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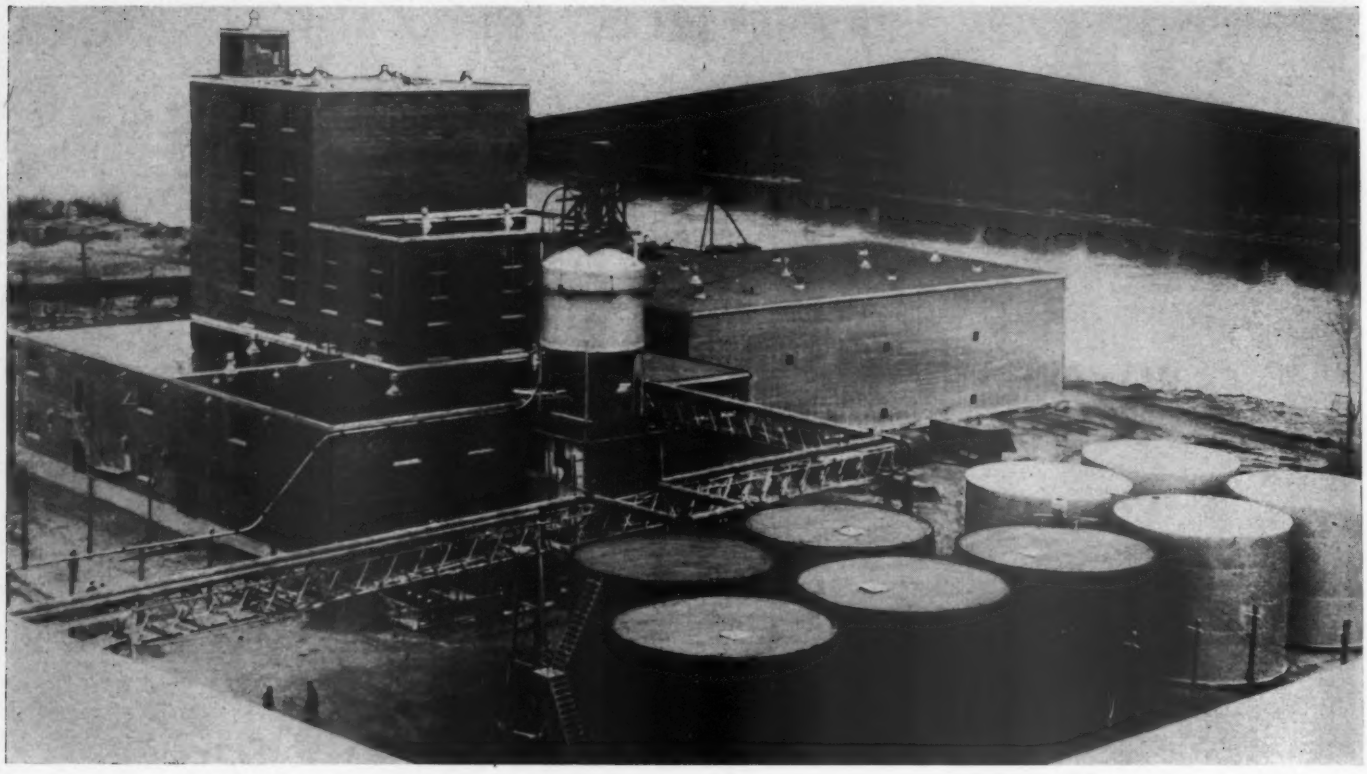
ALLEGHENY METAL is stocked by all Joseph T. Ryerson & Son, Inc. warehouses



GENERAL VIEW OF NEWEST AND LARGEST alcohol plant in world using sulfite waste liquor, built for Commercial Alcohols Ltd., of Montreal, on property adjacent to Canadian International Paper Co., Gatineau, Que.

A NEW ALCOHOL PLANT

ADVANCED PROCESS AND EQUIPMENT

Here is an exclusive illustrated article on one of the important and most recently completed by-product operations of the North American pulp industry, obtained by a PULP & PAPER editor on a special trip to the vast integrated wood industrial center at Gatineau, Quebec, where paper, pulp, building board, Masonite and plywood are made.

The newest, most advanced and largest alcohol plant using sulfite liquor as its raw material has started operations on property adjacent to the Gatineau, Quebec, mills of Canadian International Paper Co., about nine miles down the picturesque Ottawa River from the city of Ottawa.

The Vickers-Vulcan Process Engineering Co., Ltd., of Montreal, a joint subsidiary of The Vulcan Copper & Supply Co., and Canadian Vickers, Ltd., completed the plant at a cost of about $3,000,000. The plant is owned and operated by Commercial Alcohols, Limited, one of the largest producers of industrial alcohol in Canada. It is designed to produce 9,000 gallons of alcohol from 900,000 gallons of liquor effluent per day (U. S. gallons).

The design and engineering work was contributed by the Vulcan staff while the equipment required was fabricated, chiefly of stainless steel and copper, in the Montreal shops of Canadian Vickers. Essentially, the new Gatineau plant is similar to, although larger than the one designed and built by Vulcan at Bellingham, Wash., for the Puget Sound Pulp and Timber Company during the war years (described in an illustrated article in the June, 1945, issue of **PULP & PAPER**).

This now constitutes the third sulfite liquor alcohol plant in North America, the first being that of the Ontario Paper Co., Thorold, Ont., for which distillation equipment was designed by Vulcan. Other smaller plants of this general type are being used in connection with European pulp mills, but the Gatineau plant is by far the largest and most modern in every respect. It will produce from 2 million to 2.5 million Imperial gallons of ethyl alcohol annually (an Imperial gallon equals 1-1/5 U. S. gallons). A large proportion of the alcohol is used for antifreeze made by Commercial Alcohols, Ltd., and marketed as "Super-Pyro." Other uses are for paints and varnishes, perfumes and toilet articles, vinegar, chemical manufacturing, medicinal uses, essential oils, flavorings, and munitions.

The product of Commercial Alcohols, Ltd.'s, Gatineau distillery is of the highest quality. It is a very neutral spirit, especially low in congeneric content, and sets a high standard for industrial neutral spirits from any source.

This plant requires only three operators per shift. Of course, there will also be three or four government officers or inspectors. Piping is all in colors according to strict pipe code, to identify the fluids passing through them.

The extensive use of stainless steel and corrosion-resistant materials is of special interest to the chemical pulp industry and in this article its uses are noted.

The stainless steel is type No. 316. Sheets were supplied by the Crucible Steel Co., and plates by Allegheny Ludlum Steel Corp. of Pittsburgh. Stainless clad, also used in large amounts, is from Lukens Steel Co., Coatsville, Pa. Trent Tube Mfg. Co. of East Troy, Wis., supplied all stainless tubing and piping, all made by automatic method of welding. Anaconda Copper supplied copper for a part of the distillation system. This plant contains very large quantities of stainless steel, stainless clad steel and stainless steel piping.

The conversion of fermentable carbo-

BRIGHTER WHITE PAPERS

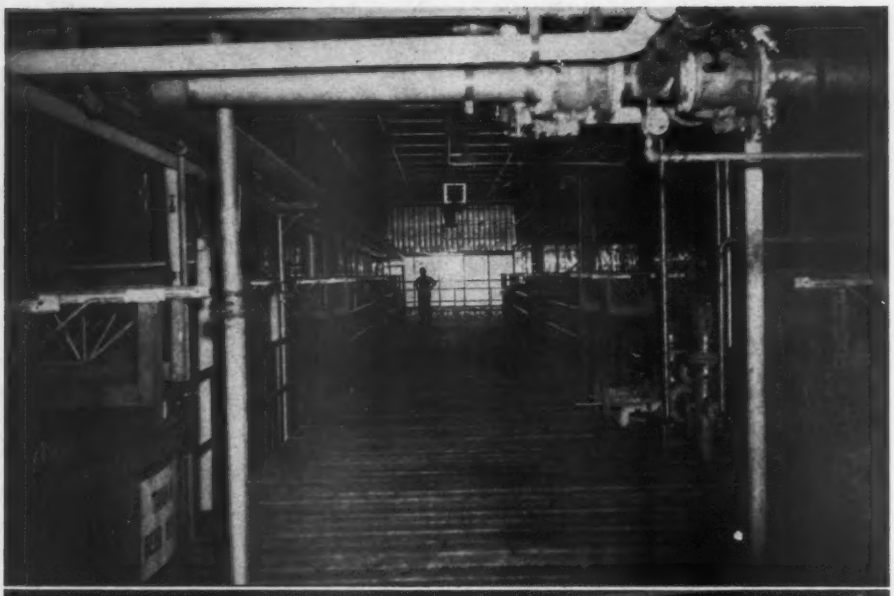
Mean More and Happier Customers

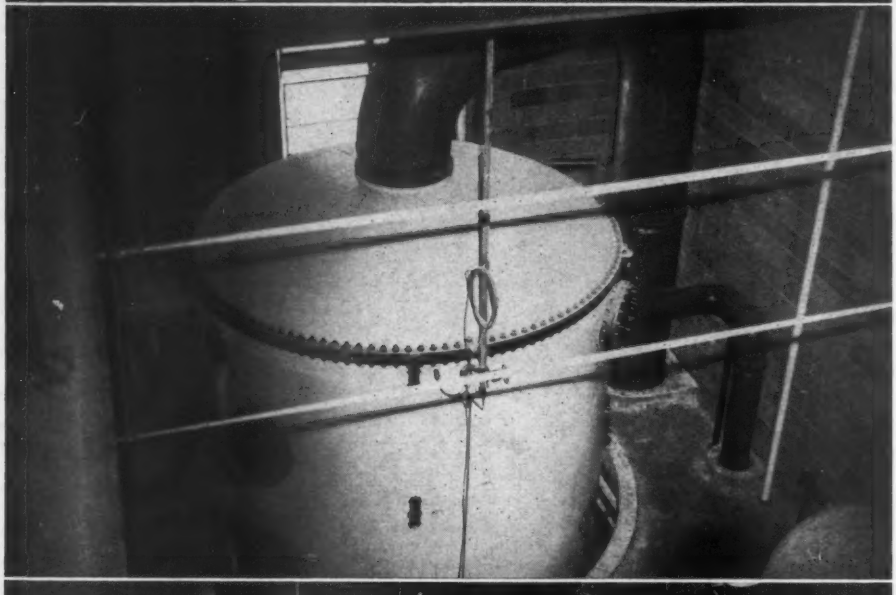
White paper manufacturers can improve their profit position by using higher percentages of short fibre pulps, i.e., more soda and less sulphite and sulphate. Sutherlands refine this cheaper furnish so much better that sheet brightness increases, formation improves, smoothness becomes greater (less super-calendering), and strength becomes higher—all this at increased speeds. And with greatly reduced power consumption and maintenance of stock preparation equipment.... Remember, Sutherlands develop the fibre strength without destroying the fibre length, thus producing a faster draining pulp. This means more money for you in higher production and more satisfied customers due to higher quality.... You'd be surprised at how fast Sutherlands pay for themselves. May we show you?

SUTHERLAND REFINER CORPORATION · **TRENTON, NEW JERSEY**

Manufactured in the United States by Valley Iron Works Co., Appleton, Wisconsin

Sutherland Refiner Ltd., Windsor Hotel, Montreal, P. Q.





VIEWS IN GATINEAU DISTILLERY:

Top view: Interior of Fermenter Building with view of operating catwalk between fermenters and beer well. Fermentation is continuous.

Middle view: The top of atmospheric beer still on fourth floor of building.

Lower view: Instrument panel for automatic control of the distillation system.

hydrates to ethyl alcohol reduces the concentration of the oxygen-consuming elements in the waste liquor by approximately 50 per cent.

The process can be classified under the general headings of liquor recovery; liquor treatment, cooling, and neutralization; fermentation; distillation.

1. Liquor Recovery

A liquor recovery unit composed of two 3-stage rotary washers has been constructed on the premises of the Canadian International Paper Co. This unit handles approximately 900,000 U. S. gallons of waste sulfite liquor per day, being the output from ten digesters having a daily capacity of 365 tons of sulfite pulp.

The washers are arranged in two banks of three washers each; first two washers of each bank being used for the separation of the sulfite liquor, the third washer being used for washing the pulp. These washers operate on high temperature liquor and are designed to recover a maximum amount of this sulfite liquor with a minimum dilution at a temperature of approximately 185° F.

The washers, Impco design, were manufactured by the Sherbrooke Machinery Companies, Ltd., of Sherbrooke, Que., and are constructed of stainless steel, with rubber covered drums. Each washer is 8 ft. diameter x 10 ft. face, and are driven by Link Belt reducers and General Electric motors. Askania consistency controllers handle the stock feed under varying conditions.

2. Liquor Treatment, Cooling, and Neutralization

At the alcohol plant there are five 120,000 U. S. gallon storage tanks constructed of British Columbia fir in which the waste sulfite liquor is received from the recovery plant. The liquor passes through these tanks at high temperature to eliminate contamination and is subsequently pumped to coolers where the temperature is reduced to 82° F.

The 36 coolers, arranged in six banks of six coolers each, are constructed of stainless steel tubes and steel shells. Cold treated water from the paper company boiler plant is used as the coolant and is returned to the boiler plant with the heat pick-up resulting from the cooling of the waste sulfite liquor. The next step in the process is to neutralize the waste sulfite liquor to pH 5, with a slurry of hydrated lime. The hydrated lime is received by rail in bulk and unloaded through the airveyor system with storage bin capacity of two carloads.

The lime is automatically weighed by a Jeffrey "Waytrol" to a battery of three lime slurry tanks from which the slurry

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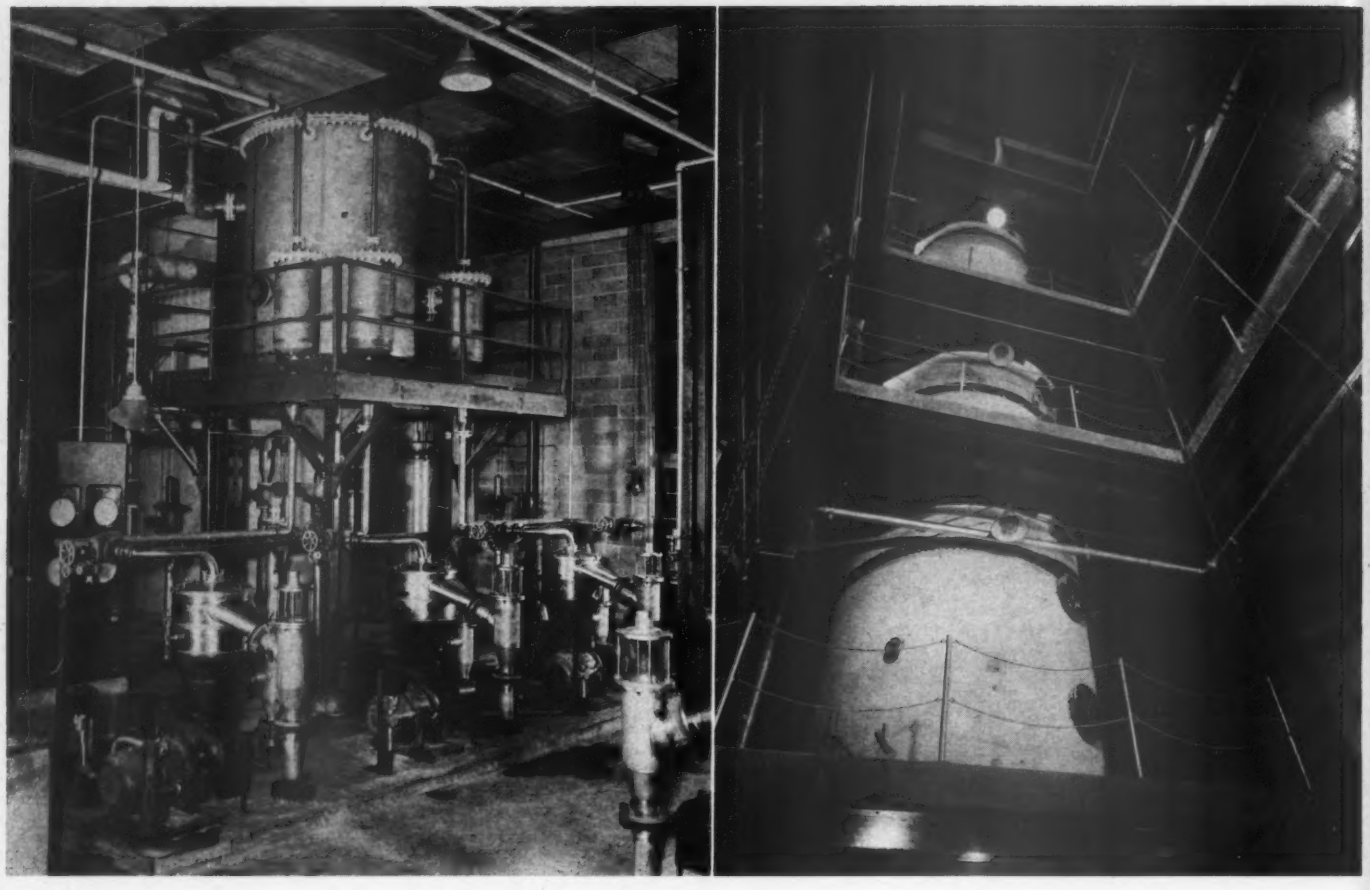


GATINEAU DISTILLERY views:
Left—A section of plant where yeast is continuously recovered from the fermented sulfite liquor.
Right—One of six columns erected as part of the Vulcan Vapor re-use Distillation System.

is pumped to a stainless steel reaction vessel where it reacts with the waste sulfite liquor from the coolers. The neutralization in the reaction vessel is controlled by a Beckman pH amplifier and a Foxboro pneumatic controller. At Gatineau, the overall economies do not justify steam stripping the waste sulfite liquor for SO_2 recovery and hence greater amounts of lime will be used than at Bellingham.

3. *Fermentation*

From the neutralizing reaction vessel the waste sulfite liquor is pumped to the seven fermentation tanks made of British Columbia fir which are housed in an aluminum-clad building 80 ft. x 140 ft. x 33 ft. high. The fermentation is continuous, the liquor flowing through stainless steel pipes from one fermenter to the next. Each fermenter has a capacity of 120,000 U. S. gallons and is agitated by a stainless steel propeller agitater of the side entering type. When the fermented liquor emerges from the seventh fermenter, it is pumped through a battery of eight de Laval separators where a proportion of the yeast is recovered and sent back to the first fermenter. The beer, containing approximately 1% ethyl alcohol by volume, is the second fraction from the separators and this is run to a beer well from which it is sent to the stills.

4. *Distillation*

Hot effluent from the distilling columns heat up the incoming beer in stainless steel heat exchangers from which the hot beer then passes to the two beer stills. The first beer still is 10 ft. 6 in. in diameter x 52 ft. high, completely constructed of stainless steel. It operates at 3 pounds pressure and the distilled vapors pass to a stainless steel steam generator which provides heat for the vacuum beer still. The second beer still is 8 ft. 6 in. in diameter x 53 ft. high, and is constructed of stainless clad shell and stainless steel plates. It operates under vacuum and the distilled vapors, after condensing, join with the vapor condensate from the steam generator, and together pass to the purifying column.

This is the second fundamental departure from the Bellingham process. The purifying column is constructed completely of No. 316 stainless steel and is operated under forty pounds pressure. At this elevated temperature, impurities are broken down and separated as an overhead draw-off, and the alcohol obtained as a bottom draw-off. From this point the weak alcohol mixture is sent to an 8-ft. 6-in. diameter stainless clad rectifying column operating under vacuum where the alcohol is rectified to 95% volume. This column is heated by low pressure steam from the above mentioned steam generator. Second grade product from this column may be used for antifreeze, shellac solvent, and other industrial solvent and chemical uses.

At this point in the distillation, all corrosive constituents have been removed, and the 95% alcohol is passed on to two copper vacuum stills, 52-in. and 54-in. diameters, both 54 feet high. In these columns the alcohol is distilled to remove the last traces of impurities, and this first grade product is known as Cologne Spirits, a virtually odorless alcohol employed in the cosmetic and pharmaceutical trade.

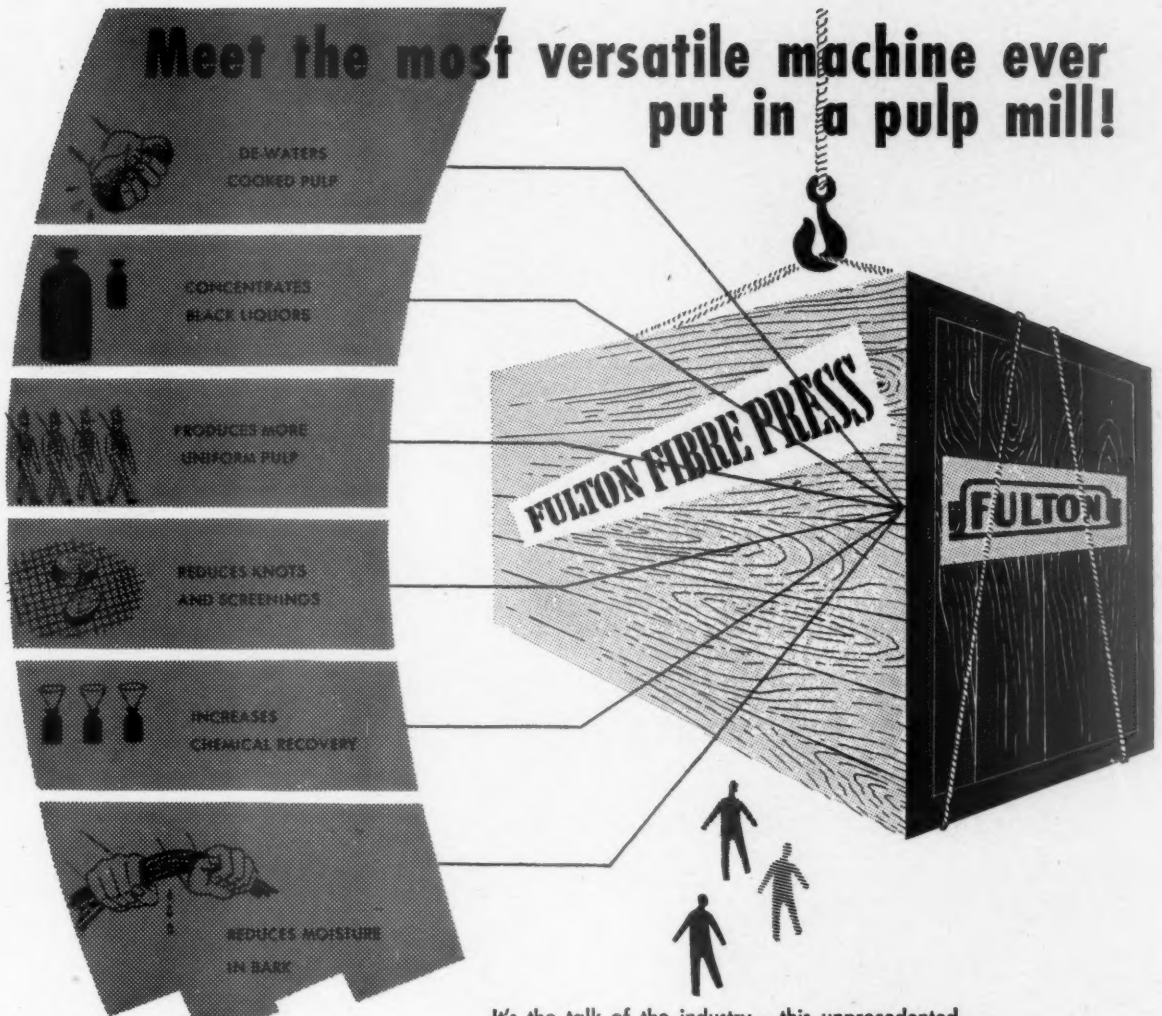
All pumps in the six-column distilling apparatus can be controlled from the operating panel as well as at the motor position. The process is fully controlled by means of recording flow pressure and temperature controllers, level controllers, and rotameters.

The product alcohol is collected in large tinned copper closed receivers from which it passes periodically through the weigh scales when the Excise Department releases it for storage as such, or for denaturing or shipping. The plant will be equipped with a modern canning department for the packaging of the company's brand of radiator antifreeze, "Super-Pyro."

Magnesia Insulation Plant

A novel adjunct to the distillery is the erection on the premises of a mag-

Meet the most versatile machine ever put in a pulp mill!



It's the talk of the industry — this unprecedented new FULTON Fibre Press that brings you more multiple benefits from *one operation* than anything ever introduced in the long history of pulp-making!

- **SAVES LABOR, POWER, HANDLING EQUIPMENT AND WATER**
- **SPEEDS UP PULP PROCESSING AND INCREASES CAPACITY**
- **MINIMIZES YOUR STREAM POLLUTION PROBLEM**
- **PROVIDES CONTINUOUS OPERATION**

WANT PROOF? Send us samples of the pulp, bark or screenings you wish to process. We will gladly make test runs on a FULTON Fibre Press at our plant and send you the results — Or, if you prefer, come see for yourself!

For full details phone, wire or write:

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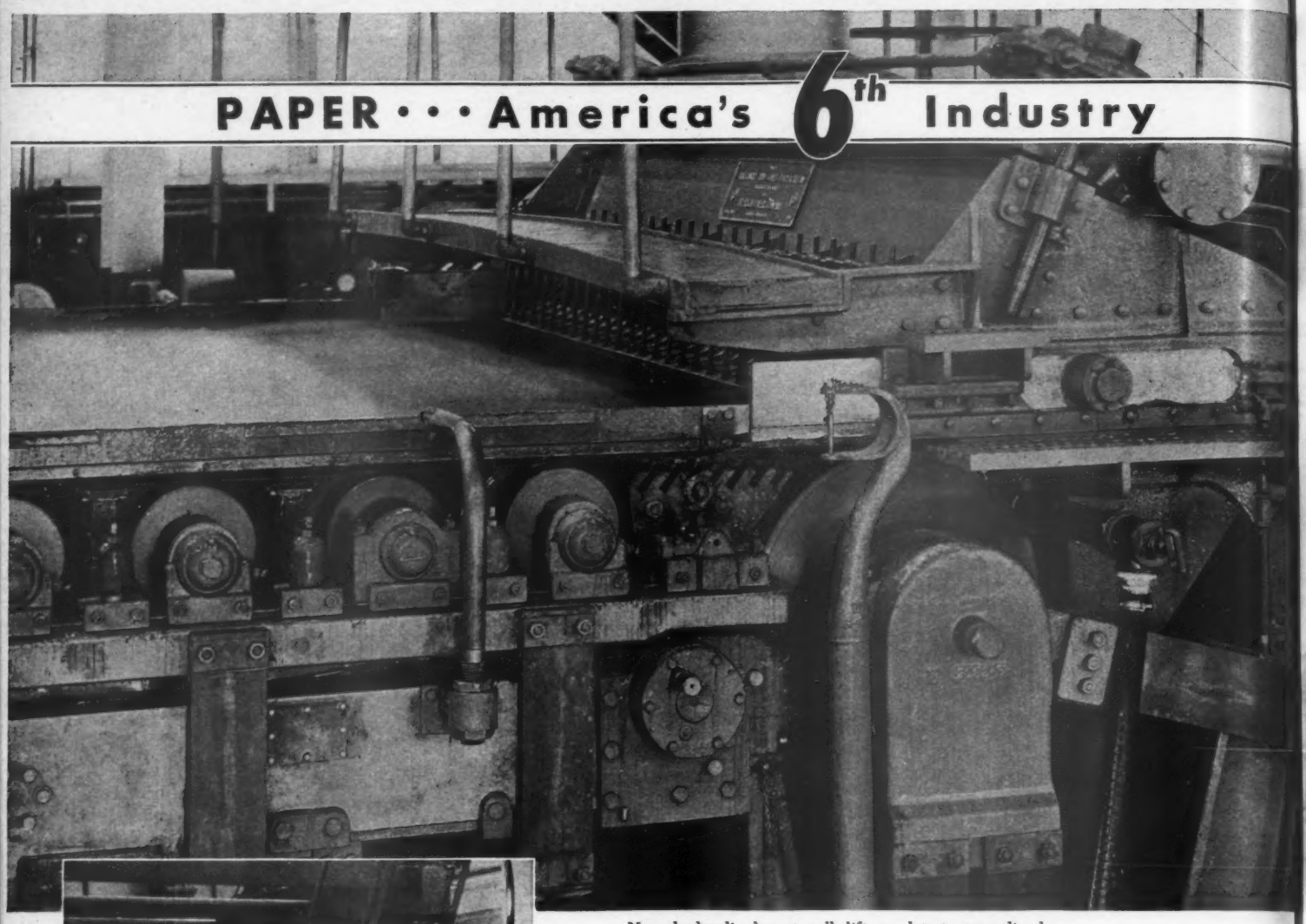
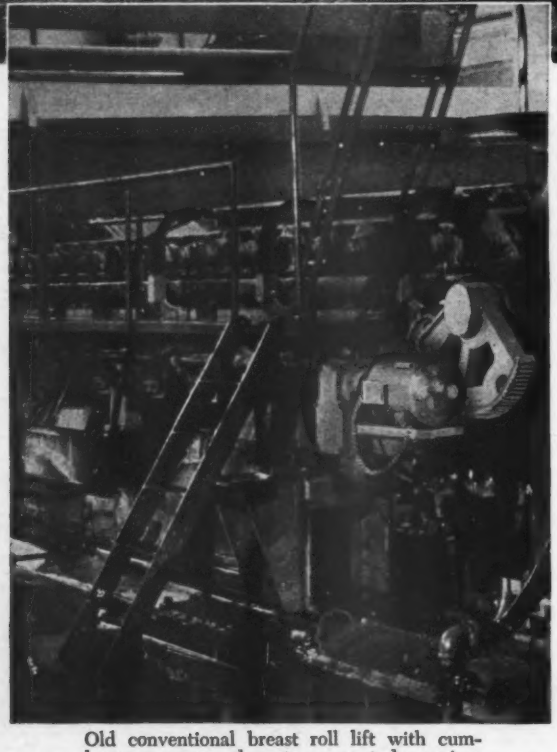


New hydraulic breast roll lift on latest streamlined Puseyjones Machines totally *enclosed* in the side frames.



Old conventional breast roll lift with cumbersome, *exposed* motor operated gearing.

Now the Breast Roll Lifts Hydraulically

Here is one of the latest operating advantages of Puseyjones Machines. The breast roll is now raised and lowered from operating position by hydraulic mechanism totally enclosed in the side frames, replacing the conventional exposed gearing and motor. Check these important advantages:

(1) Eliminates danger of breakage

(2) Reduces maintenance cost

(3) More efficient wire changing

(4) Greater accessibility for operators

This new hydraulic breast roll lift is just one of the many design improvements in the new Puseyjones Machines, improvements that mean higher speeds, lower production costs and improved competitive position. Let us give you the facts.

THE PUSEY AND JONES CORPORATION

Established 1848. Builders of Paper-Making Machinery

Wilmington 99, Delaware, U.S.A.

THE SIGN OF TRADE MARK SUPERIOR QUALITY

YES
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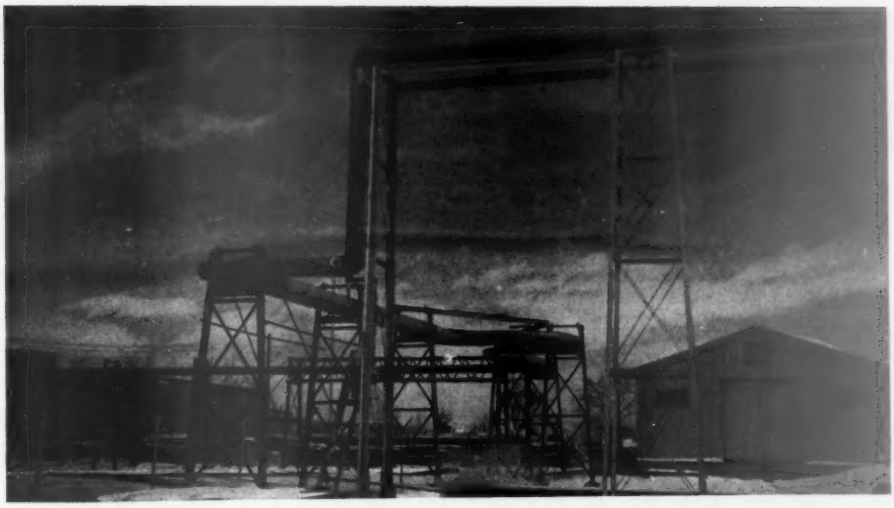
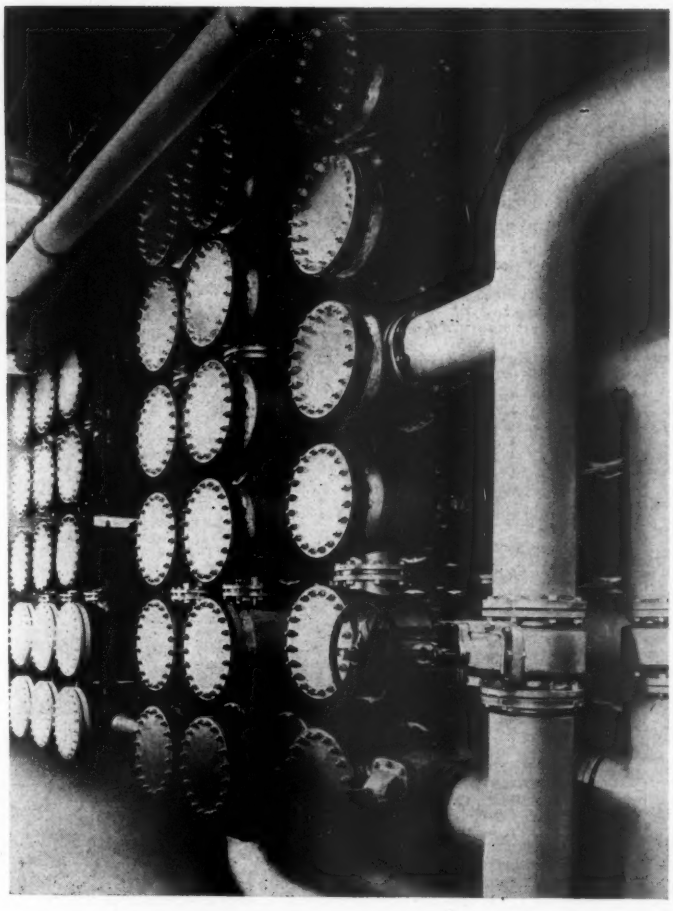
1949 Fall Meeting
TAPPI, Portland, Ore.

nesia insulation plant housed in a brick and steel structure 100 x 250 feet. Here magnesium oxide, or hydroxide, is carbonated with the CO_2 recovered from the alcohol fermentation tanks.

A magnesium carbonate slurry incorporating 10% asbestos fiber is moulded in an automatic moulding machine, the design and engineering of which was carried out in the new $40,000,000 research center of Johns-Manville Corp. at Manville, N. J. The machine produces 85% magnesia insulating slabs and pipe covering in sizes to fit pipe from half inch up to 12-inch in diameter. The rated capacity of this plant will be in the neighborhood of 3,000,000 board feet per annum. This is a patented process and the only magnesia insulation plant of its kind in Canada.



AT GATINEAU DISTILLERY:
Detail of steam and sulfite waste liquor pipe lines from the Canadian International Paper Co. mill at Gatineau to the adjacent Commercial Alcohols Ltd. property on Gatineau River.



EQUIPMENT AT GATINEAU—

Stainless steel heat exchangers for cooling waste sulfite liquor to fermentation temperatures in the alcohol process. As this article states, much stainless and stainless clad is used in this plant.

LOUIS CALDER, president of Perkins-Goodwin Co., is the originator of the outdoor drive-in gasoline service station. Only a few friends in this industry know that back in 1914, when gas was stored in cans in garages and funneled into motorists' tanks, Mr. Calder conceived and built the first clean—and much safer—outdoor station with metered pumps in New York. The Kesbec chain had grown to 55 when he sold it to a Standard Oil subsidiary in 1931, but he continues as president of the still expanding chain.

ESCO Ltd. Represents Welland Electric Steel

ESCO Limited, 1086 Homer St., Vancouver, B. C., has been appointed exclusive representative of Welland Electric Steel Foundry, Ltd., of Welland, Ont., in British Columbia, Alberta, Saskatchewan and Manitoba. The Welland foundry is a prominent producer of stainless steel specialty valves, fittings and static cast stainless steel pipe and other castings.

Sprout-Waldron Makes Change In Pulp and Paper Division

With the resignation of Frank C. Vaughan as manager of its Pulp and Paper Division, Sprout, Waldron Co., Muncie, Pa., announces sale of its 36-2 Refiner will be handled exclusively in New England States and the Southeast by its representative, Thaxter W. Small, with headquarters at Valdosta, Ga. William Converse will have charge of the sale of the Sprout-Waldron refiners in the balance of the U.S. Mr. Converse has been representing Sprout, Waldron in the Middlewest and, will continue to make headquarters in Appleton, Wis.

Rovang & Associates Start New Metals Firm

A new company, W. G. Rovang & Associates, with headquarters at 903 Terminal Sales Building and plant on Swan Island, Portland, Ore., has been formed for building stainless and mild steel equipment for the pulp and paper industry. The line includes valves, Pacofab fabricated stainless valves, stainless fittings, pipe, and tanks. The organization is currently carrying on valve, fittings, and pipe-work projects in several of the Northwest mills. Key operating personnel includes W. G. Rovang, president; Harold Hilton, vice president, and W. E. Blinn, purchasing agent.

BURKE MORDEN got a lift during the national Superintendents convention at Atlantic City in June when Mrs. Morden air-mailed from Portland, Ore., a clipping from the front page of the Oregonian which brought news and pictures of the two young Morden boys. It seems they entered their dog in the annual "mutt contest" and he won the cup! The dog editor declined to described strains in the Morden "mutt" other than to say that, on the behind, were spots distinctly Dalmation.

Greater Service to Fork-Truck Users

Greater Opportunities for Men Who Sell Them—

Clark Dealer Plan Achieves **Both**

WITH sales of its fork-lift trucks and industrial towing tractors exceeding all expectations, and with its position of production and engineering leadership firmly rooted in rich, productive soil, Clark Equipment Company, in its 30th year as a builder of materials-handling machines, has found it desirable to establish a nation-wide organization of independent franchised dealers as exclusive distributors of the products of its Industrial Truck Division.

THIS is indeed a far cry from 1939 when the entire output of the Industrial Truck Division was sold with ease by a handful of men!

TODAY'S volume is twenty times that of 1939; and the Company's stature—financial and engineering—is more than twenty times as great as in 1939. A considerable number of the '39 machines are in daily service, and many older machines are in regular operation after 20 and 25 years. The conviction is natural that 30 years hence many '49 machines will still be "on the job" alongside the new output of 1979. There will be no "orphans" bearing the name "Clark."

TO KEEP PACE with increasing demands, and to deliver the broad and competent service which Industry expects from Clark, the Company has chosen this plan of selling through independent dealers as a sound and logical evolution. Until the middle of 1948, approximately one-third of Clark's Industrial Truck Division representatives were on an independent dealer basis. It is expected that by the end of 1949 the nation-wide dealer organization will be complete.

HEADING up the dealerships or actively participating in them are key men of Clark's erstwhile factory-branch sales offices —factory-trained men, tested and proved as capable materials-handling counselors. These men share with Clark management the conviction that they can deliver, under the new plan, a broader and more valuable service to their customers and to all users of mechanized materials-handling; that they face broader, deeper vistas of opportunities which ambitious men so earnestly desire—opportunities for independence, for building greater earnings by their own efforts, for achieving prestige and leadership in their communities.

ANOTHER influence which furthered the plan is the fact that Clark management historically has been engineers and manufacturers. By decentralizing marketing activities, Clark can intensify its emphasis on development of better materials-handling machines and methods—to the end that Clark products shall achieve even higher excellence at lower cost, shall become still more valuable to industrial users and to the dealers who serve them.

THROUGH your Clark dealer, all the advantages of Clark engineering, integrated production and matchless experience are quickly available to you. He is fully qualified to make an unbiased appraisal of your materials-handling operations, and to recommend the type of machine that will serve you most efficiently at lowest cost. It's "good business" to CONSULT CLARK.

CLARK EQUIPMENT COMPANY

INDUSTRIAL TRUCK DIVISION

BATTLE CREEK 59, MICHIGAN

OTHER PLANTS—BUCHANAN • JACKSON • BERRIEN SPRINGS, MICHIGAN

REPRESENTATIVES IN PRINCIPAL CITIES THROUGHOUT THE WORLD

AUTHORIZED CLARK DEALERS

ALABAMA: BIRMINGHAM
*M-H EQUIPMENT COMPANY
845 LOMB AVENUE

ARIZONA: PHOENIX
ROBERT H. BRAUN COMPANY
743 GRAND AVENUE

ARKANSAS: LITTLE ROCK
FRED J. VANDEMARK COMPANY
209 EAST MARKAM STREET

CALIFORNIA: FRESNO 1
ROBERT H. BRAUN COMPANY
505 MASON BUILDING

LOS ANGELES 23
*ROBERT H. BRAUN COMPANY
3008 EAST OLYMPIC BLVD.

OAKLAND 3
*GLEN L. CODMAN COMPANY
10521 PEARMAIN STREET

STOCKTON
GLEN L. CODMAN COMPANY
409 BELDING BUILDING

COLORADO: DENVER 2
J. N. MEADE
420 U. S. NATIONAL BANK
Service: FORK LIFT TRUCK SERVICE
2855 WEST 8TH AVENUE

CONNECTICUT: NEW HAVEN
*C. E. REUTTER CORPORATION
66 AMITY ROAD

FLORIDA: TAMPA
CLARK EQUIPMENT COMPANY
1145 ELLAMAE STREET

GEORGIA: ATLANTA
M-H EQUIPMENT CO.
(CONTACT BIRMINGHAM)

ILLINOIS: CHICAGO 4
MODERN HANDLING EQUIP., INC.
310 SOUTH MICHIGAN AVENUE
(Service: Cook County)
LIFT TRUCK SERVICE COMPANY
6919 SOUTH HALSTED STREET

INDIANA: INDIANAPOLIS 5
*W. A. MARSCHKE & SONS
1121 E. 46TH STREET

SOUTH BEND 14
*MATERIALS HANDLING EQUIP. CO. OF SOUTH BEND, IND.
2625 SOUTH MICHIGAN STREET

IOWA: DAVENPORT
BIG RIVER EQUIPMENT CO.
1344 WEST THIRD STREET
Service: DAVENPORT ALL-WHEEL-DRIVE CO.
1344 WEST THIRD STREET

DES MOINES
*BIG RIVER EQUIPMENT CO.
914 GRAND AVENUE, ROOM 255

KANSAS: KANSAS CITY
Sales and Service:
(SEE KANSAS CITY, MISSOURI)

WICHITA
Service: GENERAL ENGINE & EQUIPMENT CO.
218-220 SOUTH WICHITA

LOUISIANA: NEW ORLEANS
T. G. FRAZEE
910 CARONDELET BLDG.

MAINE: PORTLAND
BRODIE INDUSTRIAL TRUCKS, INC.
465 CONGRESS STREET

MARYLAND: BALTIMORE
*FALLSWAY SPRING & EQUIPMENT CO.
CORNER FALLSWAY & LEXINGTON

MASSACHUSETTS: BOSTON (MALDEN 48)
*BRODIE INDUSTRIAL TRUCKS, INC.
50 COMMERCIAL STREET, MALDEN 48

MICHIGAN: BATTLE CREEK
*CLARK EQUIPMENT COMPANY
INDUSTRIAL TRUCK DIV. PLANT

DETROIT 2
CLARK EQUIPMENT COMPANY
6520 CASS AVENUE
Service: INDUSTRIAL TRUCK SERVICE, INC.
8815 HARPER AVENUE

MINNESOTA: MINNEAPOLIS 2
MATERIAL HANDLING ENGINEERS
225 SOUTH 5TH STREET, ROOM 201
Service: SMITH-DUNN COMPANY, INC.
2301 UNIVERSITY AVENUE, S. E.

MISSOURI: KANSAS CITY 6
CLARK EQUIPMENT COMPANY
1009 BALTIMORE AVENUE
Service: LIFT TRUCK SERVICE & SUPPLY
NORTHWEST 15TH AND McGEE STREETS

ST. LOUIS 8
MATERIALS HANDLING EQUIPMENT CORP.
3820 WASHINGTON BLVD.
Service: FORK LIFT TRUCK SERVICE CO.
511 NORTH CHANNING AVENUE

NEW JERSEY: JERSEY CITY
JERSEY INDUSTRIAL TRUCKS, INC.
34 EXCHANGE PLACE
Service: BOND INDUSTRIAL MAINTENANCE CO.
51 CLARKSON STREET AT GREENWICH, N. Y. 14

NEW YORK: BUFFALO
*BRODIE INDUSTRIAL TRUCKS INC.
1450 MICHIGAN AVENUE

NEW YORK 6
*BOND INDUSTRIAL EQUIPMENT CO.
165 BROADWAY, ROOM 2200 (OFFICE)
Service and Display Room:
51 CLARKSON STREET AT GREENWICH, N. Y. 14
also 289 BOND STREET, BROOKLYN 31

SYRACUSE
BRODIE INDUSTRIAL TRUCKS INC.
712 STATE TOWER BLDG.

ALBANY (WATERVLIET)
*INDUSTRIAL TRUCK SALES, INC.
BROADWAY AT 25TH, WATERVLIET

NORTH CAROLINA: CHARLOTTE
CLARK EQUIPMENT CO.
416 KESWICK AVE.

GREENSBORO
Service Outlet only:
INDUSTRIAL TRUCK SERVICE CORP.
629 SOUTH SPRING STREET

OHIO: CINCINNATI 9
*ROBERT C. YOUNG & CO.
4453 34TH AVENUE

CLEVELAND
CLARK EQUIPMENT COMPANY
522 ROCKEFELLER BLDG.

TOLEDO 10
P. L. REYNOLDS, 2558 FULTON STREET
Service: WILLIS DAY STORAGE CO.
801 WASHINGTON STREET

OKLAHOMA: TULSA
ARST EQUIPMENT COMPANY
34 NORTH MADISON

OREGON: EUGENE
PRESTON FALLER COMPANY
891 TAYLOR STREET

PORTLAND 5
PRESTON FALLER COMPANY
1220 S. W. MORRISON STREET

PENNSYLVANIA: HARRISBURG
BRODIE INDUSTRIAL TRUCKS, INC.
3229 MEADOW LANE

PHILADELPHIA 22
BRODIE INDUSTRIAL TRUCKS, INC.
1605-23 NORTH FRONT STREET
Service:
PHILADELPHIA ENGINE REBUILDERS, INC.
330 WEST QUEENS LANE

PITTSBURGH
*MATERIAL HANDLING INCORPORATED
319 THIRD AVENUE

SOUTH CAROLINA: COLUMBIA
M-H EQUIPMENT CO.
(CONTACT BIRMINGHAM)

SOUTH DAKOTA: SIOUX FALLS
CENTURY EQUIPMENT & SUPPLY CO.
22 WEST 7TH STREET

TENNESSEE: MEMPHIS 3
*FRED J. VANDEMARK COMPANY
1110 UNION AVENUE

TEXAS: DALLAS
T. G. FRAZEE
1012 FIRST NATIONAL BANK BLDG.
Service: TRUCK EQUIPMENT COMPANY
2409 COMMERCE STREET

HOUSTON
*T. G. FRAZEE, 810 PETROLEUM BLDG.

UTAH: SALT LAKE CITY
ALBERT J. ISAACSEN CO.
45 SOUTH 3RD WEST STREET)

VIRGINIA: NORFOLK
*McLEAN-SHAND, INC.
955 WEST 21ST STREET

WASHINGTON: SEATTLE 1
*PRESTON FALLER COMPANY
1921 MINOR AVENUE

SPOKANE 9
PRESTON FALLER COMPANY
EAST 41 GRAY AVENUE

WISCONSIN: MILWAUKEE 2
CLARK EQUIPMENT COMPANY
759 NORTH MILWAUKEE AVENUE, ROOM 623
Service: LIFT TRUCK SERVICE CO.
5710 WEST NATIONAL AVE., WEST ALLIS, WIS.

DISTRICT OF COLUMBIA: WASHINGTON
CLARK EQUIPMENT COMPANY
927 15TH STREET N. W.

TERRITORY OF HAWAII: HONOLULU
*PRESSED STEEL CAR COMPANY
538 REED LANE, P. O. BOX 300

*Sales and Service Combined.

K-C'S MEMPHIS MILL

MODERN MATERIALS HANDLING

The establishment of the two-machine creped wadding plant of Kimberly-Clark Corp. at Memphis, Tenn., when regarded in connection with the company's part in the Coosa River Newsprint Co. project at Coosa Pines, Ala., which will supply a portion of its future pulp supply, stands as a significant development in the diffusion of the United States' industrial power embodied in part by increased pulp and paper production in the South.

The southward distribution of the company's production interest is balanced by the Terrace Bay Kraft pulp mill project in Canada described in an illustrated article in the April 1949 issue of **PULP & PAPER**.

As is well known in this industry, the creped wadding product of Kimberly-Clark, developed first in Neenah, Wis., has branched into dozens of trademarked names such as Kleenex, Kotex, Delsey, and Sanek; and industrial application in such tradename products as Kimpak, Kimsul. "Cellucotton" made rapid strides as World War I increased demands for surgical dressings. In 1916 the original wadding machine at the Globe mill in Neenah, Wis., was rebuilt and a second wadding machine added. In 1917, the Neenah mill was rebuilt to produce wadding.

Following World War I, K-C's marketing of the creped wadding products became so divergent from old line products that Cellucotton Products Co. was formed to handle it. In 1927, International Cellucotton Products Co., Inc., which absorbed all trademarks and marketing, was formed and stock was distributed to Kimberly-Clark shareholders.

Historical Background

In the 1920's, Kimberly-Clark had acquired the half interest of its partner, the Thilmany Pulp & Paper Co., in their jointly owned Niagara Falls, N. Y., mill and converted the two machines from specialty papers to absorbent wadding. Now known as Niagara Falls No. 2 mill, its facilities were expanded to include converting for wadding products. In 1927 a third wadding machine was added; in 1928 a fourth. The total machine capacity thus reached 88 tons daily, all of which is converted in the plant.

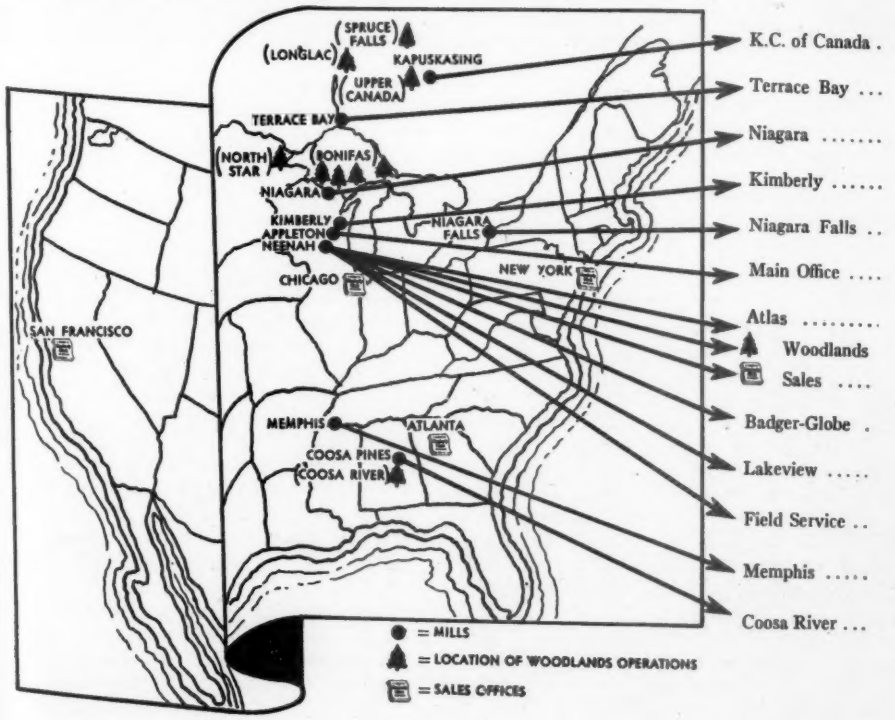
During the 1930's two wadding machines were added at the Lakeview mill in Neenah, which was acquired from Sears-Roebuck in 1929. At the Badger-Globe mill two wadding machines were added, and converting equipment to produce Kimsul building insulation.

The postwar expansion program included: (1) expansion of the wadding capacity by 165 tons or 68%; (2) erection of the new sulfate pulp mill at Terrace Bay, Ont., by a wholly owned Canadian subsidiary, Longlac Pulp & Paper Co., Ltd., with 300-ton daily capacity, and (3) the establishment of the large manufacturing and converting operation in Memphis, Tenn., which is the subject of this article. The Memphis operation absorbed a smaller, pioneer operation of International Cellucotton Products Co. unit in Memphis that employed 150 employes in assisting the Kleenex supply into the southern market.

The first machine at the Memphis, Tenn., creped wadding plant of Kimberly-Clark went into production in Dec. 1947; the second in Jan. 1948. The employe payroll reached a total of 800.

The Kimberly-Clark Corp. now has an annual productive capacity of 126,000 tons of creped wadding. This compares with a capacity of 84,000 tons at the beginning of 1947.

THIS MAP INDICATES THE GROWTH OF THE KIMBERLY-CLARK organization in North America. The Memphis wadding mill described in this article marks the extension of its production facilities for cellulose products into the South. It will be managing and operating for newspaper publisher-owners, the newsprint and pulp mill at Coosa Pines, Ala., next year. In our June 1949 issue PULP & PAPER carried a unique, illustrated and complete description of K-C's new bleached kraft pulp mill at Terrace Bay, Canada.



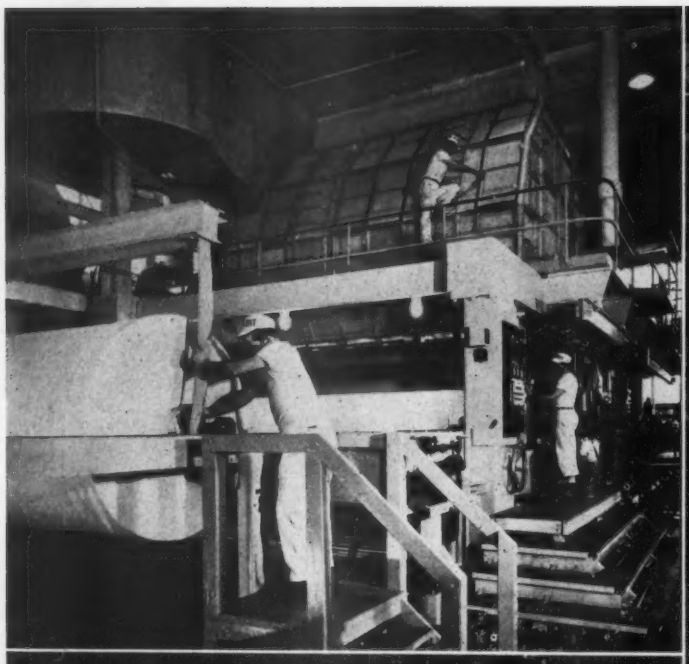
A Major Handling Problem

When the Kimberly-Clark Corp. acquired the Fisher Body property in Memphis from War Assets Administration, the first major problem confronted was that it had 638,500 square feet of potential productive space on a single ground floor instead of the multiple levels experienced elsewhere.

Accustomed to dropping process materials from one floor to another without major horizontal movement, the new acquisition proved intriguing to the company's engineers.

Resulting from careful studies, there has emerged a completely mechanized handling system from the unloading point for pulp to the final stacking of finished product in out-going railroad freight cars. Where the product elsewhere might have moved in process through the length of one floor, then, after dropping to the next level, reversed direction in process, the new converting plant spans the potential distance from one floor to another by horizontally functioning mechanical aids.

Each day the rail carriers servicing the Memphis plant switch into the building carloads of pulp for conversion and other company products received under a transit rate for distribution in mixed car lots to Southern points. The pulp is moved by Clark Industrial Towing Tractors (Clark Tructractor Div., Clark Equipment Co.) into storage from which it moves as



VIEWS AT KIMBERLY-CLARK'S MEMPHIS mill:

Top left: Beloit Iron Works made this creped wadding machine in collaboration with K-C Central Engineering.

Top right: Overhead soft roll conveyor takes small rolls from storage into fluff room and into packaging room.

Lower left: Kimberly-Clark has a remarkably well-equipped and specialized machine shop at Memphis. Here is an electronically-controlled lathe which maintains mirror-like finish on Beloit crepe machine rolls.

Lower right: Valley Iron Works Vortex beater is fed at right of this picture by this large capacity, slow-moving conveyor. Of all pulp used, 85% comes by rail. Clark trucks deliver pulp to this conveyor.

needed to the beater for processing.

As needed, the Clark Towing Tractors move the pulp bales to a specially built conveyor feeder for the Valley Iron Works "Vortex" batch beater in which 3200 pounds of pulp are mixed with 4600 gallons of water and bleach liquor every 19 minutes and sent to the beater chest in the basement, thence to the 120-ton capacity 4-story high bleach tower. The bleach tower itself is served with an automatic lime slacker and a 7,000-gallon tank in which the milk of lime is chlorinated for the bleaching. The conveyor for the beater has a three-hour capacity.

The lime used in bleaching is handled from railroad car by Dracco Corp. (Cleveland) airveyor into tank storage inside.

About 65% of the pulp received daily is carried direct to the beater conveyor feeder, minimizing handling.

Machine Operations and Finishing

After the bleaching and other stages, the furnish goes to either of two creped wadding machines. These machines were built by Beloit Iron Works with many features of which are exclusively Kimberly-Clark engineered.

The stock entrance equipment was made by Valley Iron Works of Appleton, Wis. From fan pump to wire, this Valley unit, built to close tolerances of only a few thousandths of an inch, weighs about 50 tons.

In coming off the 60-ton drier, the paper is scraped with a blade, which gives it the creped appearance. Each machine produces a 13-foot wide roll.

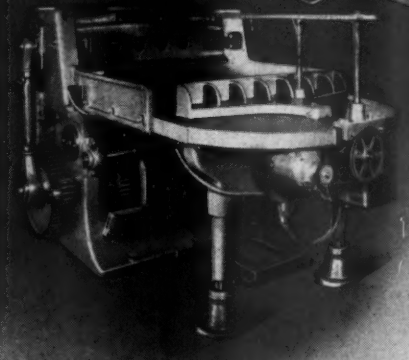
The paper produced for Kleenex is rewound and cut into smaller rolls, each of 640 pounds. The finished roll goes to a table from which it is carried with a Clark fork-truck that has been equipped with as coop to fit its load. These smaller rolls are stacked on Kimpreg coated plywood pallets (32 x 32 inches); four rolls to a set and one set to each pallet. Two pallets go to each trailer on a six-trailer Clark tractor-drawn train. At this stage, the creped wadding moves to storage until issued to the machines for cutting and packing.

The second machine produces a jumbo roll for conversion into Kotex. These rolls are carried by their axle on especially designed tow cars to the rewinder area. Here the rolls are fed in sheets into a

Protect your investment....

with a SMITH & WINCHESTER MODEL "E" UNDERCUT TRIMMER

Completely new and massive design, heavy duty construction, two-hand starting, illuminated index tape, and push button controls for electric power back gauge drive. (Gear guards have been removed to show main drive.)



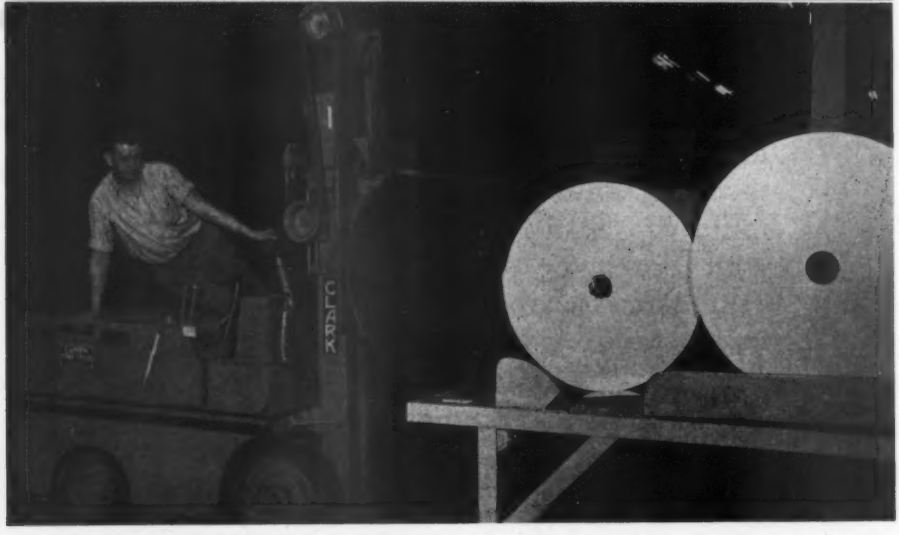
Paper Making Machinery
Bag machinery for single and multi-wall bags of pasted and sewed valve type
Rotary Spot Cutters, hand or automatically controlled
Shower Pipes.

YOUR investment in finished stock is large, particularly just before the trimming operation. Rejects and spoiled work resulting from faulty or inaccurate trimming are costly. Protect this investment with Smith & Winchester Model "E" Trimmers designed to meet today's needs for fast production, hairline accuracy and safety. Look into all the new features of the Model "E" Trimmer.

Write for Bulletin!

THE SMITH & WINCHESTER *Manufacturing Company*
SOUTH WINDHAM, CONN.

SERVING THE PAPER INDUSTRY SINCE 1828



MECHANIZED HANDLING OF MATERIALS at the Memphis plant of Kimberly-Clark is illustrated in these views: Top—Conveyor not only lifts outward-bound products clear of floor level activity but through ingenuity of Kimberly-Clark engineers, delivers packages within five feet of actual stacking point within box cars.

Middle—Packaged Kleenex is handled into storage and fed to shipping conveyor with use of pallets and Clark Equipment Co. (TrucTractor division) Fork Trucks.

Below—Rewound finished creped wadding rolls from paper machine are handled by a Clark Fork Truck fitted with a scoop as shown in this view.

multiple winder and then cut into appropriate widths. After this preparation the product goes into storage with the aid of a continuous overhead conveyor. In going out of storage the same overhead conveyor takes it to the converting machines.

Material for cutting and packing for Kleenex is moved to conveyors feeding the machines by Clark Towing Tractors. After packaging the product moves to storage by conveyor. From the Kotex machines, the product also moves by conveyor to storage.

In all of the operations to this point, emphasis is laid on care in handling, not only from the point of sanitation but also because any damage whatever results in rejected materials. The area in which are located the wadding machines, storage space, fluff machine, and packaging operations are classified as "decontaminated" and kept closed off from the balance of the plant by Airlec doors. The doors are operated by pull ropes, both in and out, by truck operators and pedestrians and they are made by Schoelkopf Mfg. Co., Madison, Wis.

The elimination of "touch labor" in handling materials is carried into trimmings and waste paper. This is accumulated in slotted bins, which are picked up by Clark Towing Tractor for delivery to wastepaper dealers' motor trucks. The motor trucks carry the bins to the dealers' plant where they are emptied and returned.

Sanitation is emphasized in other ways, such as the placing of covers or hoods over creped paper rolls when in storage to prevent dust settling on them.

In all of the handling of the material from its receipt to final loading out, handling with machinery rather than by hand is emphasized. Pallets of various size to fit each size and stage of the product in process of handling have been devised, and it can be said that if the product is not on a pallet it is on a conveyor if it is in motion.

Shipping the Products

An interesting, efficient phase of the operation is the assembling of shipments and loading out of carlots. The cases in storage are moved to a floor level Mathews conveyor within the storage space in accordance with orders. Here they are put on the conveyor in specified sequence. The conveyor rises to above head-height to permit freedom in operation of power trucks. The outgoing railroad track lies within the building, permitting all-weather shipment, and its platform is at car level. The conveyor has take-offs at requisite points for individual cars.

When the cases of absorbent products reach the car doors, instead of stopping there the final sections of the conveyor are detachable and have been curved to fit the situation. Hence, the conveyor takes the package to within five feet of where it will be stacked within the car.

In planning for maximum efficiency of The Memphis plant, the Kimberly-Clark Corp. has not overlooked the importance of maintenance. In doing so it has built up a force of engineers and skilled tradesmen in all the needed crafts, and has established a first class machine shop.

The Memphis plant is staffed with top-notch experienced supervisory personnel from the Kimberly-Clark organization, with Charles G. Eubank as manager, and with an alert, locally recruited force that affords it a real Southern complexion.

Diagrammatic sketch of Norton Pulpstone showing the uniform, controlled grain spacing that produces long, uniform fibers.

CONTROLLED STRUCTURE is a *Patented* Norton Development

IT takes long, well-fibrillated fibers to make strong paper. And it takes a pulpstone with just the right grain spacing to make such fibers. That grain spacing is not always the same either. It must be different for different types of wood, for different types of grinders.

That's why Norton "Controlled Structure" is important to producers of mechanical pulp. This patented Norton development makes it possible to accurately regulate the spacing of the grains in the stone — to provide just the right grain spacing to produce long, fibrillated fibers from your kind of wood with your kind of grinders.

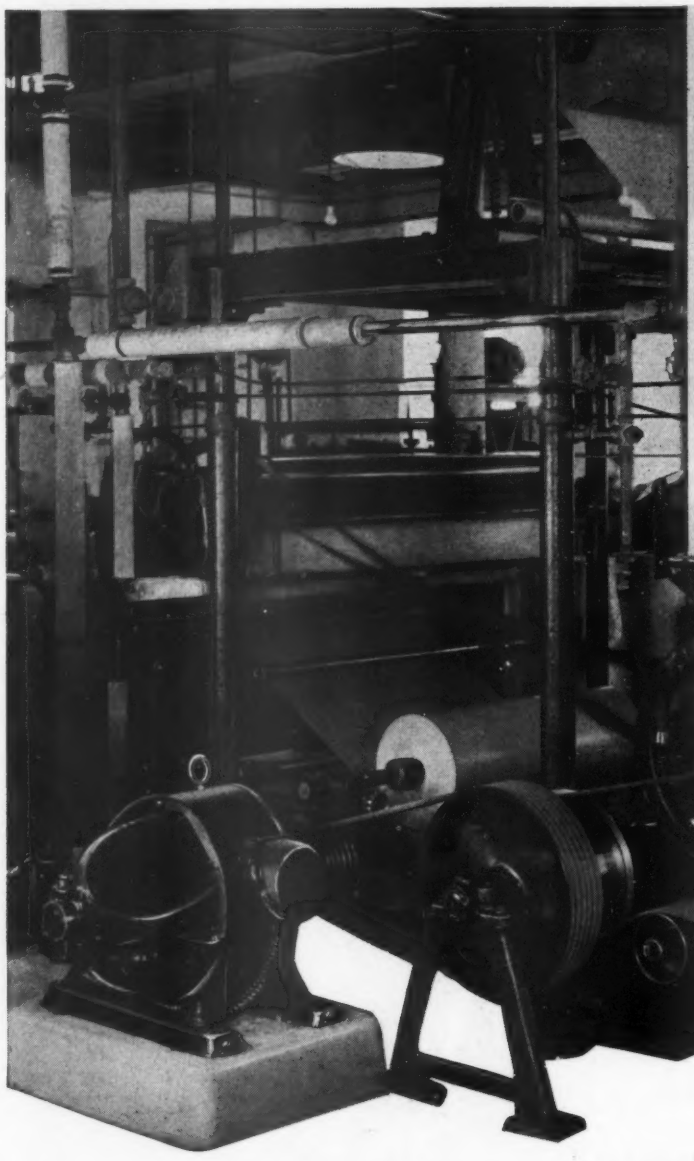
Norton engineering service is available to study your requirements and prescribe Norton Pulpstones in just the right specifications—not only in structure but also in the kind of abrasive, the grain size and the stone hardness.

NORTON COMPANY, Worcester 6, Mass.
Norton Company of Canada Ltd., Hamilton, Ontario

NORTON ABRASIVES

YOU CAN BE **SURE**.. IF IT'S

Westinghouse



Typical Paper Industry Applications for Westinghouse Packaged Drives

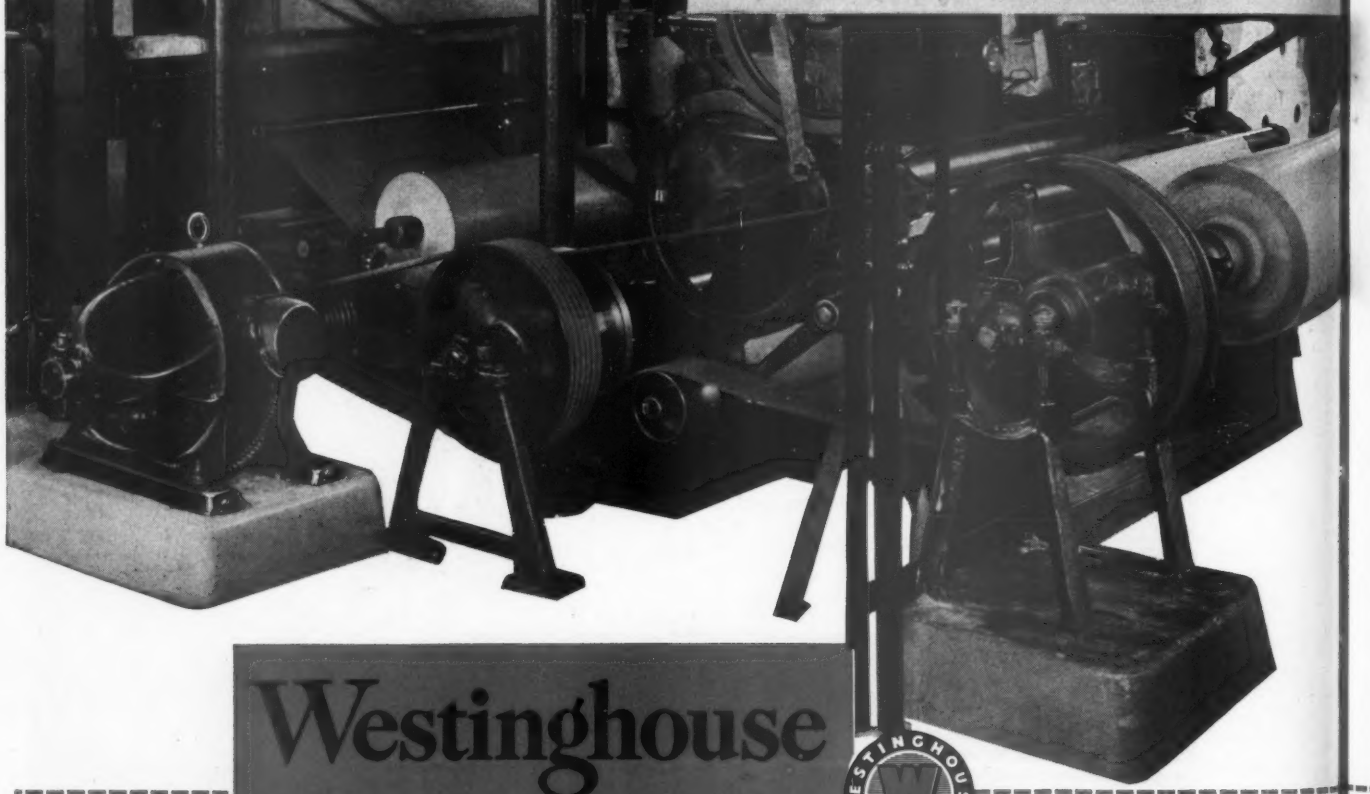
Although packaged, Westinghouse factory-built drives are made by a "building-block" method that permits many optional features. These include: stepless, time-limit acceleration and deceleration, precision speed regulation, IR drop compensation and extra exciter capacity for multimotor drives.

As a result, Westinghouse Packaged Drives are adaptable to many papermaking auxiliaries, as well as converting and finishing machinery.

Some of the tried-and-proved applications in the Paper Industry are:

Winders • Shakes • Rotary Cutters • Pulp Washers • Wet Machines • Printing Presses Special Converting and Finishing Machines

If you need an adjustable speed drive, Westinghouse Consulting and Application Engineers will gladly investigate your processes and recommend the packaged drive best suited to your requirements.



Westinghouse

EQUIPMENT FOR THE PAPER INDUSTRY

YOUR CHOICE

of Packaged Drives with Westinghouse

For many paper machinery applications requiring a packaged drive, the improved performance desired can be obtained by using the type having an M-G set. Other machines require the all-electronic type for top performance.

With Westinghouse, you can have your choice:

AV Life-Line Packaged Drive. This drive, using an M-G set, gives adjustable speed control up to a range of 16 to 1. It is a simple, factory-wired package housed in one self-ventilated cabinet. It is economical in every way—first cost, installation, power consumption, maintenance and floor space.

Mot-O-Trol. This packaged, all-electronic adjustable speed drive is designed for use with those machines that require extreme speed ranges up to 100 to 1, or precise speed regulation to as little as plus or minus ½%. Its heavy-duty components and simplified circuits assure trouble-free service under difficult mill conditions.

Both drives give you fast, smooth operation of those machines for which they are made. Each one is backed by Westinghouse unified responsibility for complete drive performance *as a drive.*

Besides drives—packaged and tailor-made—Westinghouse makes a complete line of electrical equipment for the Paper Industry. No matter what your needs, Westinghouse can supply them. Call your nearest Westinghouse District Office, or write to Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa. J-94798

ESSENTIAL ELEMENTS OF WESTINGHOUSE PACKAGED DRIVES

This compact, freely-ventilated cabinet for the AV Life-Line Packaged Drive houses the complete power unit. The motor-generator set for power conversion, dynamically balanced to eliminate vibration, is rubber mounted in lower compartment. Cooling air for the M-G set is drawn through filters which are easily replaced.

Motor and control for either drive. Motor is standard SK Life-Line, d-c motor with bearings which require no lubrication. Operator's station with combined start-stop push-button and speed control knob—an exclusive Westinghouse feature—can be installed where most convenient. Reversing and inching are optional.

This is the self-ventilated Mot-O-Trol cabinet, containing all necessary circuits for the complete control of motors. Because of simplified circuit design, Mot-O-Trol has fewer tubes, potentiometers, resistors, capacitors and Rectoxes than any similar equipment. Rugged, industrial components resist vibration and give longer life.

TO BUILD IN IDAHO

Some very preliminary engineering work has been done on a proposed future kraft pulp mill at Lewiston, Idaho, one of the most important lumbering centers in the Inland Empire region of the Far West, according to authoritative information obtained by **PULP & PAPER**.

The studies have been made by Potlatch Forests, Inc., one of the biggest forest industries operators in that region, wih three sawmills, plywood plant and vast timber holdings. Potlatch's ability to use large amounts of lumber and woods "left-overs" give them a strong advantage in any plans for building what would be the first market pulp mill in the East Washington-Idaho-Montana region. There is only one mill at Spokane.

Otto H. Leuschel, general manager of Potlatch Forests, Inc., at Lewiston, has announced plans to the press for a $12,000,000 pulp mill of 230 tons daily capacity and employing 300. It would be located probably on the Snake River adjacent to present lumber operations. Potlatch also has a new pine veneer plant there and additional sawmills at Coeur d'Alene and Potlatch, Ida.

Mr. Leuschel's announcement was made after the press had carried news of a preliminary survey for eastern interests for a pulp mill in this region. Although Mr. Leuschel has now stepped into this picture to establish Potlatch's definite interest in pulp, it is believed his projected mill would not be built for some time.

More Reports of Mills For Rocky Mountain Region

A rash of reports on new mill projects have come out in the Rocky Mountain states, where it has long been known that there is an adequate supply of good pulpwood species but of much smaller size and less productive than on the Pacific Coast. Freight rates and water supply have presented problems in some of these areas.

There are probably subtle connections between some of these reports as interested groups may want to get themselves on record—as long as these press statements were being made.

One or even two mills eventually may be built in this area, but best informed observers agree that right now is not the time, but in the course of the next two or three years possibly, at least, one of these projects will make the grade. At least two or three are still shopping for the green stuff which makes mill dreams come true.

A Mill for Colorado?

Latest announced plans were by a newspaper executive, Preston Walker, general manager of the Grand Junction (Colo.) Sentinel, who announced a new company, Columbine Development Co., aiming to use some of the 5 to 6 million cords of U. S. Forest Service timber — Engelmann's spruce—killed by bark beetles since a severe windstorm in 1939. The infestation was not discovered until 1942 after much timber had been attacked.

Mr. Walker hopes to build a mill on the Colorado River between Rifle and Boulder and making 185 tons of newsprint for newspapers in an 8-state group and 65 tons of kraft pulp for market. It is true that in tight periods these more remote and smaller newspapers have had difficulty getting adequate newsprint.

Another company which is still seeking the capital necessary for operation handicapped by strict Montana financing laws is the Idaho-Montana Pulp & Paper Co., with plans for a 150-ton kraft mill at Polson, Montana.

Other projects are discussed on this page. The pulpwood species resources of the Idaho-Montana-East Washington region are published in the Pulpwood section of our 1949 North American Annual Review Number.

On Page 80 is a photograph of the Colorado Forest Service timber attacked by the bark beetle which will be useless for manufacturing purposes unless harvested soon for pulp. This is the timber referred to in the above article.

Inland Empire Pulp Mill Still Appears Far Off

The proposed Inland Empire pulp mill being discussed in western newspapers earlier this summer (page 32, July **PULP & PAPER**) as a result of a survey trip made by Dr. R. S. Aries, Brooklyn consultant, does not appear to be imminent, according to the best sources available. Chamber of Commerce officials in the Idaho-Montana area had reported the trip of Dr. Aries, quoting him as saying that mills of not over 300 tons could be supported in west Montana, in the region above the Kootenai-Couer d'Alene national forests, and in the Clearwater-Salmon area.

Contacted in Brooklyn, Dr. Aries stated that he could not at this time reveal the names of the parties for whom he had made the survey and said that the project was "very far away at this point."

Usually reliable sources on the Inland Empire mill projects, which have been talked about for the past 15 years, say that the freight rate is the chief deterrent to such a mill. The freight cost from the area to the eastern seaboard is equal to that from Seattle which is 400 miles further west.

And the Forest Service has not looked with favor on large mills which economically would be more feasible than small ones. The Forest Service, which controls most of the timber in that area, has indicated it prefers smaller mills which would compete for stumpage. Other regional factors, plus the recent sliding in the pulp market, make the project seem distant at this time.

But Dr. Aries pointed out that his trip was only an initial survey and that Chamber of Commerce announcements were premature. He left New York in July for Mexico to investigate the possibilities of a semi-chemical wallboard plant there. Following this, he will go to Guatemala, and then to Cuba to survey a projected mill which would work on bagasse.

Three experienced paper machinery men recently added to Lukens Steel Co., Coatsville, Pa., staff include ROBERT ERVIN (left), formerly with Union Bag and Paper Corp., Savannah, as engineer in construction and installation of equipment. He is a graduate of Georgia Institute of Technology. MAX UNSELD (center), came to Lukens from Bagley & Sewall, where he was a design engineer. He was educated in Germany, graduating from Esslingen Engineering College there. A. REED SCHUSTER (right), also came from Bagley & Sewall. He will supervise assembly and erection of machinery built in Lukenweld Div.

Inland Empire Wood

M. B. Dickerman, division of forest economics, U. S. Forest and Range Experiment Station, Missoula, Mont., reports that production of pulpwood is taking on increasing importance in the Northern Rocky Mountain states. From 1947 to 1948 production of pulp bolts nearly doubled, while pulp-log cutting continued at about the same level.

Lodgepole pine was the leading pulpwood species cut in 1948. Some 23,000 cords of this species were cut in 1947, while in 1948 production was over 42,000 cords. All pulp bolts are being shipped some 1,500 miles to Wisconsin pulpmills and come mostly from Gallatin and Meagher counties.

Montana-North Idaho-East Washington pulpwood production, 1948:

	Pulp Logs Scribner Log Scale: M. bd. ft.	Pulp Bolts: 100" Montana Standard Cords	Total Logs and Bolts
Cottonmood	60	.....	150
Grand fir	13,533	.....	33,832
Western hemlock	3,214	.....	8,035
Lodgepole pine	.....	42,795	42,795
Engelmann spruce	1,487	.....	3,718
Total	18,294	42,795	88,530

Eddy Acquires Control In Victoria, B. C., Mill

The E. B. Eddy Co. of Hull, Que., and Ottawa, Ont., has acquired a controlling interest in Sidney Roofing & Paper Co., Victoria, B. C., according to an announcement by W. S. Kidd, president of the Eddy organization, and confirmed by R. W. Mayhew, president of the Sidney company.

The transfer makes little difference to the actual ownership as Garfield Weston, Canadian financier, owns the Eddy company and it was his controlling stock in the Sidney company that was sold to Eddy. Last year, A. Welch, general manager of the Sidney company, went to Hull to become general manager of Eddy.

Mr. Mayhew states that the Victoria company will gain an important advantage through its closer connection with Eddy as the latter has a large research organization available to Sidney.

STREAM PROBLEM DISCUSSED

Lengthy Airing by N. Y. Technical Group

DR. JAMES E. FOOTE, now of Hull-Ottawa, Canada, retiring Chairman of Empire State group who was made honorary member. He is new Mill Mgr. for E. B. Eddy Co., Hull; was Asst. Mgr. of B-F-D, Plattsburg.

J. H. Heuer, technical director of St. Regis Paper Co., Deferiet, N.Y., said that a federal law prohibiting the use of sulfite liquor, or any alcohol other than grain, for human consumption, is a serious handicap to the sulfite industry in the development of mill alcohol plants, during a round-table discussion of pollution control at the Empire State technical section meetings in June at Bolton Landing, N.Y. Sulfite alcohol is just as palatable as grain.

The general subject of stream control was gone into at greater length than customary at sectional meetings. H. A. Spencer, director of research, Knowlton Bros., Watertown, presided over this session. The entire meeting was presided over by Dr. James E. Foote, now E. B. Eddy Co., mill manager, Hull, Que., formerly with Diamond Match.

The work of the Council for Stream Improvement was discussed by Anthony J. Palladino, sanitary engineer, for the council. Mr. Palladino outlined work done in the states of Pennsylvania, Wisconsin, Michigan, Massachusetts, Indiana, Louisiana and Florida, all of which have passed recently legislation preventing industry from adding new waste and providing for abatement in existing pollution.

Morris M. Cohn, consultant of the Special Committee on Pollution Control of the Joint Committee on Interstate Cooperation, reviewed background of the 1948 New York State water pollution control law, initiated by Harold Ostertag, chairman of the legislative committee on interstate cooperation. The law amends the public health law and code of criminal procedure and sets up a water pollution control board which will have authority to establish classification of waterways.

After a final order has been given by the board, the mill has a year in which to make corrections, and a 5-year extension period in which to treat waste where no standard methods are now known. Mr. Cohn pointed out that federal funds are available for research on treating industrial wastes.

Classification and re-classification of public streams will be possible only after public hearings of the board. It was pointed out the committee may be more lenient toward municipalities than industries, because municipalities will be unable to float financial bond issues for disposal plants, because of constitutional limitations.

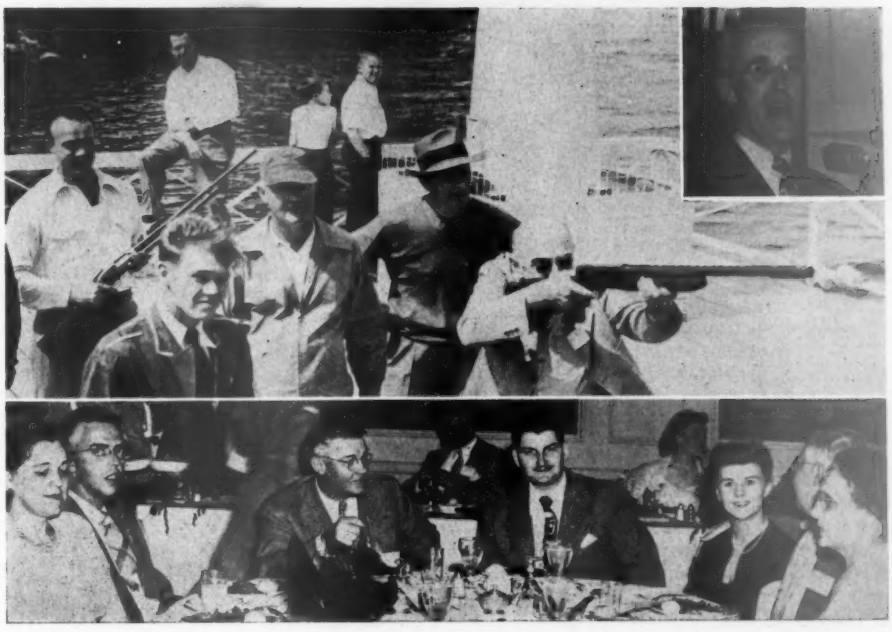
Mention was made of the pilot plant for deinking wastes at Kalamazoo where they have both preliminary settling and filtration. This process has been developed by Philip Morgan. Deinked wastes have been given preliminary treatment by the Crocker Burbank Co., but to date they have been unable to find any useful by-product for the filtered sludge mat, thus obtained. It was also pointed out that at Rhinelander, Wis., a half-million-dollar yeast plant utilizes a valuable by-product from their sulfite mill. It was pointed out that in the dairy industry there is a more serious pollution problem than the pulp industry.

Among other subjects covered at the meeting was instrumentation with talks by W. S. Yunker, sales manager for pulp and paper for Foxboro Co., and Hugh H. Lavery, assistant technical supt., International Paper Co., Corinth, N.Y.

Mr. Yunker urged mills to employ a process control engineer who could select instruments and supervise their use. He said that on the new high-speed newsprint machine at Powell River Co., technical men, not regarded as experienced papermakers, by using instruments have put a finished paper over the reel.

A. E. Bachmann, president of the technical association, told members of plans for the big national convention in Portland, Ore., in September.

Dr. Foote, former assistant manager of B-F-D mills, was voted an honorary membership since he has moved to Hull, Que. The executive committee announced appointment of C. E. Foster, Oswego Fall Corp., Fulton, N.Y., as section chairman for the coming year.



PICTURES AT LAKE GEORGE MEETING OF NEW YORK GROUP:

Top—Trapshooting from Sagamore hotel dock (left to right in front): C. A. Mehl, American Cyanamid Co., Glens Falls; bell boy; Carl Reynolds, Armstrong Cork Co., Fulton, N. Y.; C. F. Haskins, F. C. Huyck & Sons, Albany, and J. Wesley Youngchild of International Paper, North Tonawanda, who is shooting. In background are C. E. Cordell, of Barco Oil Co., Philadelphia and his son and Billy Doane, son of Foster P. Doane, Jr., of Sandy Hill.

In inset at right is Henry Horstmann of General Dyestuff Corp., Syracuse.

Below—A banquet scene (left to right): Mrs. Carl E. Reynolds; John H. Treadwell of Watertown; Carl E. Reynolds, Armstrong Cork Co., Fulton, N. Y.; Ken Wheeler, Mrs. Wheeler and Mr. and Mrs. Harold Wheeler, of Ithaca.

Miami Valley Supts. Schedule Fall Meeting

The 1949 fall meeting of the Miami Valley Division of the Superintendents Association, according to Harold C. Leighton of Beckett Paper Co., chairman of the division, will be held Sept. 16 at the Elks Country Club, Hamilton, O.

Members will be entertained with golf and prizes by Black-Clawson Co.

"Alumni" of Thilmany

THEY ARE FOUND ALL OVER THE WORLD

THILMANY "ALUMNI" who are now prominent in other pulp and paper or affiliated companies all over the U. S. (l to r): WALTER JOHNSON, Mill Mgr., Cascade mill, Brown Co., Berlin, N. H.; R. M. "DICK" RADSCH, Sales Mgr. for Appleton Machine Co., Appleton, Wis.; LESTER J. SMITH, Plant Manager, Gould Paper Co., Lyons Falls, N. Y.; HERMAN GEVERS, Engineering Consultant, St. Regis Paper Co., Tacoma, Wash.; J. J. HERB, founder of Westminster Paper Co., New Westminster, B. C., and Pacific Coast Paper Mills of Washington, of Bellingham, Wash., now actively headed by his two sons under his supervision; and ROBERT S. WERTHEIMER, Vice President and Gen. Mgr., Longview Fibre Co., Longview, Wash.

Neither Hah-vahd or Yale, nor any other more famous school for that matter, can boast a more loyal "alumni" than the Thilmany Pulp & Paper Co., at Kaukauna, Wis. Today its graduates are scattered over the world—still making kraft paper or pulp for the most part—and we haven't yet met a one who doesn't remember with fond nostalgia younger days at the distinguished mill on an island in the Fox River Valley.

They learned their lessons well at Thilmany, too, for many of them now hold positions of great responsibility in other companies.

For instance, there is Erling Riis, who is vice president and in charge of operations and personnel in the eight big southern mills of International Paper Co. with his headquarters at Mobile, Ala.

There is Robert S. Wertheimer, son of the late president of Thilmany, who is the vice president and resident manager of Longview Fibre Co., at Longview, Wash., with a large group of Thilmany men in key positions on his staff. Mr. Wertheimer was an assistant engineer at Thilmany.

There is J. J. Herb, founder of the Pacific Coast Paper Mills of Washington in Bellingham, Wash., and the Westminster Paper Co. of New Westminster, B. C., and the superintendents he brought west to head up these mills—R. C. Onkels in New Westminster and Pete Onkels in Bellingham. Pete is now mill manager for Pacific Coast Mills. In the cases of these three, they went into sulfite and groundwood tissue manufacturing instead of kraft.

There is George Lyons who went off to Tasmania at the "bottom" of the world where he is plant engineer in a kraft mill.

At last reports, other former Thilmany men and their present affiliations, include:

Walter Johnson, mill manager Cascade Mill, Brown Co., Berlin, N. H.

R. M. "Dick" Radsch, sales manager at Appleton Machine Co.

C. A. Grondona, manager of operations, Hudson Pulp & Paper Corp., New York.

Lester J. Smith, plant manager, Gould Paper Co., Lyons Falls, N. Y.

Joe Hoolihan, superintendent at Port Huron Sulfite Co., Port Huron, Mich.

P. D. Bradley, superintendent, and Alex Wodjenski, shift foreman, and Bill Wodjenski, machine tender, who are all three at B-F-D Co., Plattsburgh, N. Y.

Art Paschen, shift foreman at Detroit Sulfite Paper Co., Detroit.

George E. Rausch, former superintendent at Interlake Tissue Mills, Ltd., Merriton, Ont., and now at Marathon Paper Mills of Canada, Marathon, Ont.

Herman Gevers, pulp mill consultant to St. Regis Paper Co., Tacoma, Wash.

Dale Starke, superintendent at the Kimberly-Clark Lakeview Division in Neenah, Wis., and Bill Heintz, who is at K-C Corp.'s mill in Niagara Falls, N. Y.

William Gillen, superintendent at Fox Paper Co., Lockland, O.

J. A. Staidl, pulp superintendent at Camp Mfg. Co., Franklin, Va.

Elmer Leavitt, a superintendent at North Carolina Pulp Co., Plymouth, N. C.

Casey Nelson, engineer at Gilbert Paper Co., Neenah, Wis.

Geo. Hentz, machine tender at Escanaba Paper Co., Groos, Mich.

D. B. Uricker, American Viscose Co., Dunbar, W. Va.

Charles R. Seaborne, vice president and general superintendent at Thilmany, took leave to build the Longview Fibre mill in Longview, Wash., and since that time there have been, or still are, about 20 ex-Thilmany-ites working at the big Pacific Coast mill.

Besides Manager Wertheimer, there is Carl Fahlstrom, assistant resident manager, who was in charge of the lab in his days at Thilmany. Also, L. C. Peabody, secretary-treasurer, director of sales and assistant to the president.

There's A. P. "Tony" Siebers, who ran a machine at Thilmany and former paper mill superintendent at Longview Fibre Co., and is now paper mill superintendent at Weyerhaeuser's new Springfield, Ore., plant. His brother, Frank, is "Upper Mill" superintendent at Thilmany now, and there are quite a number of other Siebers on the Thilmany rolls.

Others from Thilmany, now at Longview Fibre:

W. W. Wenzel, pulp mill superintendent.

Henry Dauterman, assistant paper mill superintendent.

J. W. Schuh, design and planning supervisor.

Steve Siebers, paper mill town foreman.

C. G. Ditter, bag plant clerk.

E. S. Ashe, assistant personnel manager.

W. Van Dinter, digester cook.

M. Diedrick and H. Weyenberg, asfalt machine operators.

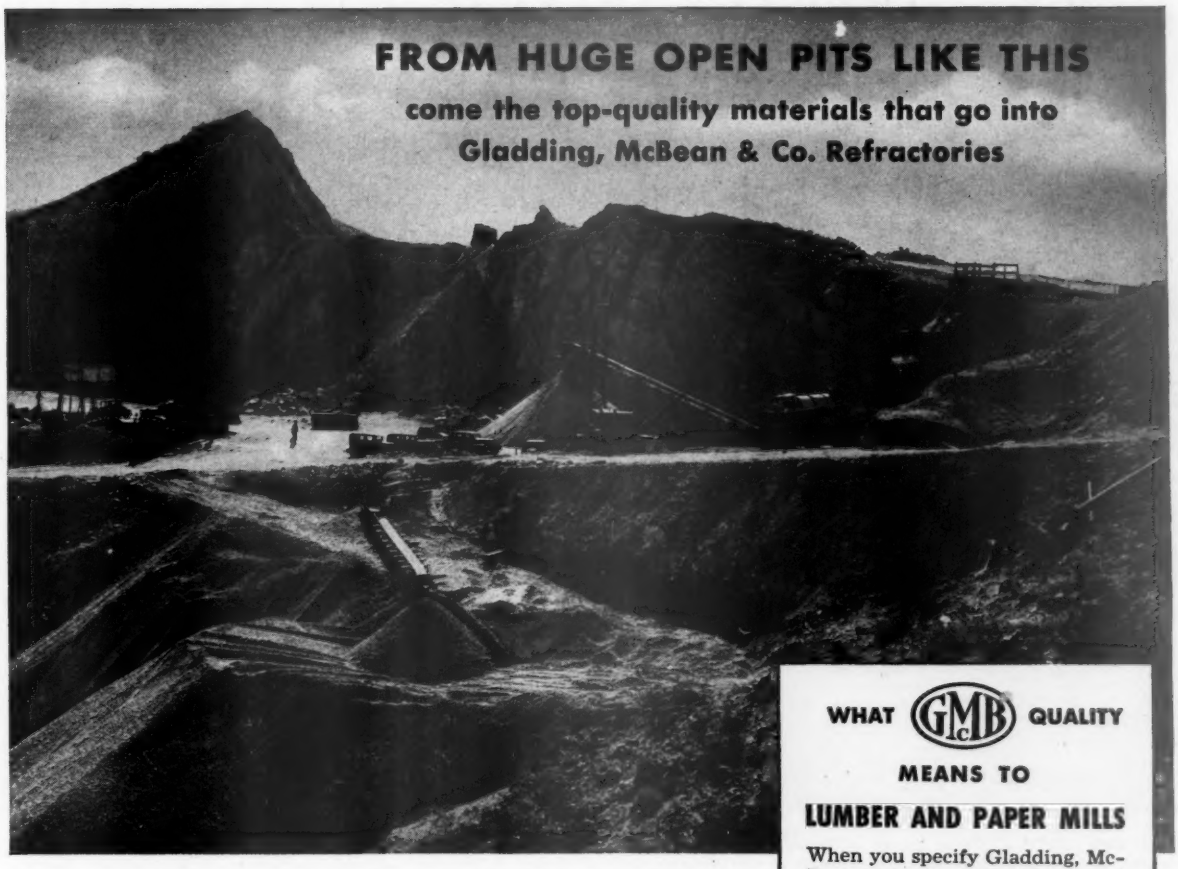
Earl Miller, machinist, and son, Claude Miller, mechanic.

C. O. Wenzel and Charles Ruppert, mechanics.

H. F. Hoehne, former pulp mill superintendent at Longview, now in business there; Jule LaPoint is still in Longview though he has left the mill, and Roman Gillen operates a hotel at nearby Castle Rock, Wash., while Tony Gillen has a tavern in Portland, Ore. Ed Umland and Henry Spiel, also former Thimany and former Longview Fibre men, have passed away.

Harry Adrians, until his death, was superintendent at the Consolidated Water Power & Paper Co. mill in Stevens Point, Wis.

We have been able to check nearly all the above ex-Thilmanyites as regards their present status, but it is possible one or two may not be entirely up-to-date reports. We would be glad to publish any later information mailed to us by readers, as Thilmany men everywhere seem to be interested in this record.



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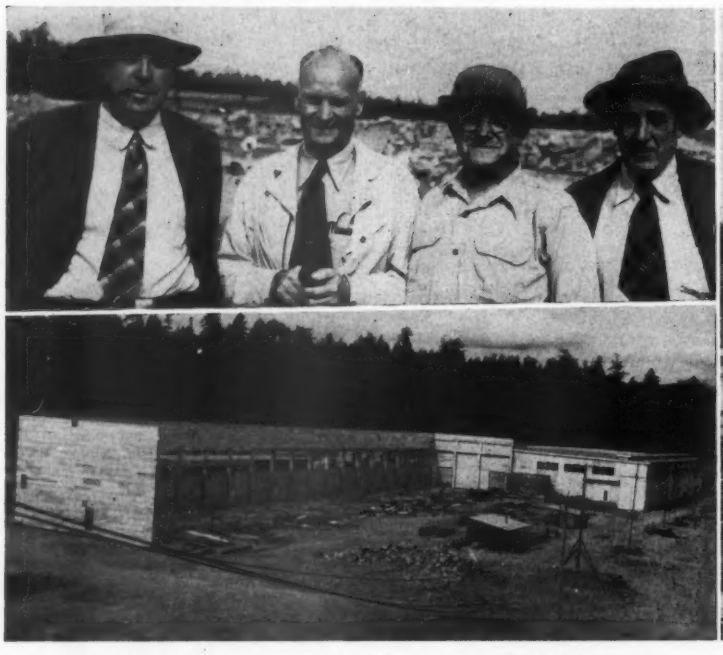
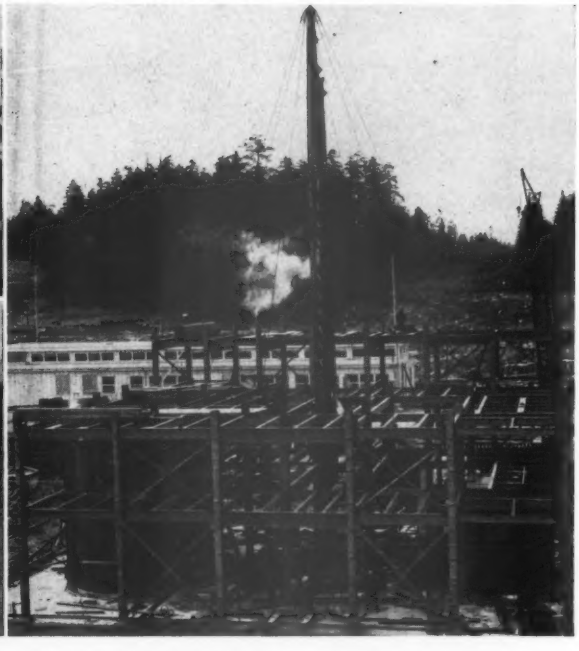




DIRECTING CONSTRUCTION at the site of Nanaimo Sulphate Pulp, Ltd., are (left to right)—VAL GWYTHER, Chief Construction Engineer for H. A. Simons, designer of the mill; MARION FREEMAN, Project Manager for B. C. Bridge & Dredging Co., main contractors; G. C. MACKAY, Resident Engineer, for the Simons organization; J. C. MacLEAN, General Foreman.

Below this group is view of reinforced concrete walls for the main Machine Room, with the almost completed pulp storage shed to the right. View is from southeast. At right Recovery Building begins to take shape. Main source of steam at the Nanaimo Sulphate Pulp, Ltd., plant will be a Combustion Engineering recovery furnace. Precipitator building and boiler room will be adjacent.

Construction of the 200-ton bleached kraft mill of Nanaimo Sulphate Pulp, Ltd., is being pushed at such a fast rate this summer that you can almost watch it grow.

Executives of B. C. Bridge & Dredging Co., main contractors, state that the project is a month ahead of schedule and they hope to have the mill ready to go into production early in the spring of 1950. Actually, this will be several months in advance of the date originally set.

"We are employing from 500 to 700 men on the job this summer," Project Manager Marion Freeman told **PULP & PAPER**.

Nanaimo Sulphate Pulp, Ltd., is a subsidiary of the H. R. MacMillan Export Co., one of British Columbia's largest producers and shippers of lumber and plywood, and it represents the organization's debut into the pulp and paper field. It will tie in closely with the other MacMillan operating units such as Victoria Lumber Co. at Chemainus, Canadian White Pine Co. and MacMillan Industries on the Fraser River near Vancouver, and Alberni-Pacific Lumber Co. and Alberni Plywoods, Ltd., at Port Alberni in that waste material from these various plants will be delivered to the pulp mill to comprise a large percentage of its raw material. It is also expected a few mills outside the MacMillan organization will contribute. Most of the logs will come from MacMillan camps on Vancouver Island.

Nanaimo Sulphate Pulp, Ltd., mill is readily accessible to all these sources of raw material supply. It is within half a dozen miles of Nanaimo, one of the largest population centers on Vancouver Island, which will make it unnecessary for the company to build a townsite. Most employes will live in Nanaimo or in that fast-growing city's suburbs.

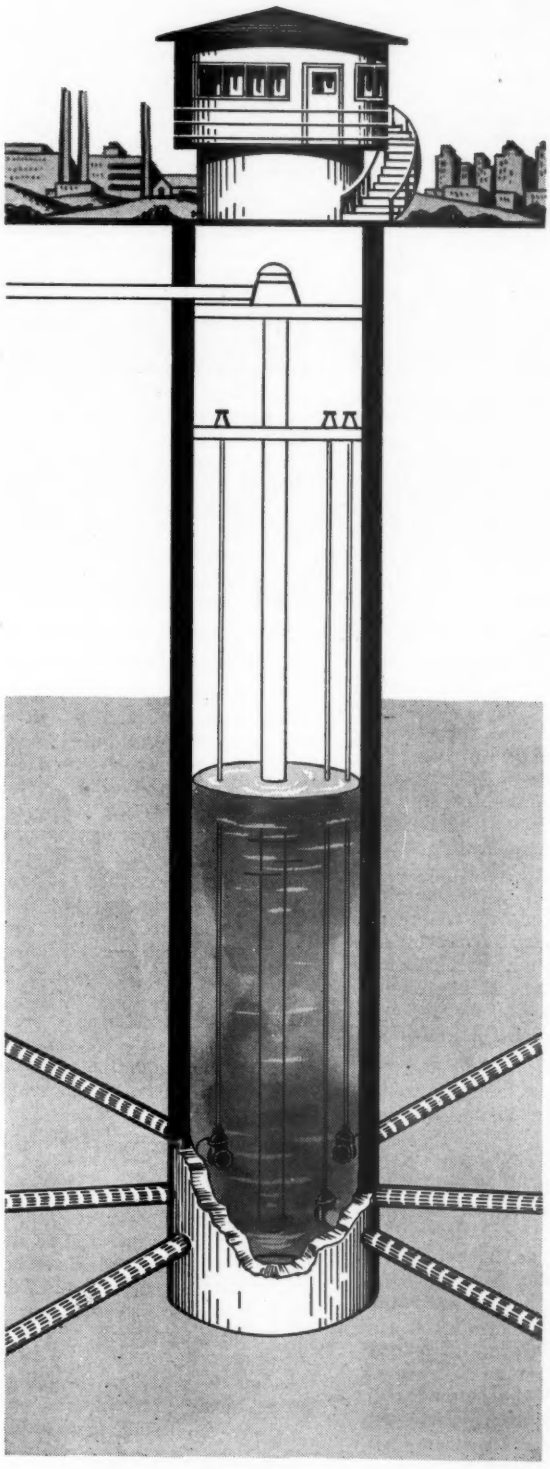
Despite its ultimate bulk, the pulp mill is not now and probably never will be within sight of the main Vancouver Island highways or the Esquimalt & Nanaimo Railway which, however, run within a few miles. The only glimpse that the traveler gets of the project is from the Vancouver-Nanaimo ferry, but this is at a distance of several miles and it gives only a faint suggestion of the industrial and economic significance of what will soon rank as the largest pulp mill on Vancouver Island.

The mill is being built on Northumberland Channel, east coast of Vancouver Island, on ground which already involved removal of some 300,000 cubic yards of rock. The location is well protected from all sides. A side road from the Island Highway leads to the site from the west. A ferry slip has been built for rail ferries which have delivered most of the construction materials and probably will be used in transport of the finished product. It may not be necessary to build a spur to the Esquimalt & Nanaimo Railway, the main Vancouver Island railroad, after all. Eventually, the mill will have its own wharf for deepwater shipping.

A Unique Water System

One of the problems that gave Howard A. Simons, designer of the mill, and his associates plenty to think about was the water supply. It was, of course, necessary to have access to a continuous and adequate source of pure water, and several alternatives were offered. After an intensive survey of many different water producing systems, both the company and the designers decided upon the Ranney Water Installation System for which Signal Oil and Gas Co. of Los Angeles holds license to patent rights for the western States and Canada. The Ranney Water Collector has new and advanced principles in design and engineering, yet is surprisingly simple in construction and operation. Step by step progress of the installation will be reviewed in an early issue of **PULP & PAPER**. The company has finally decided on an interesting project whereby groundwater naturally filtered through the soil from seepage from

FOR LARGE USERS OF *Water*



(A current RANNEY WATER INSTALLATION is at the site of the MacMILLAN NANAIMO SULPHATE PULP MILL, Vancouver Island)

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Horizontal collector pipes surrounded by gravel beds act as both production and filter units. In most cases water produced by RANNEY WATER INSTALLATIONS shows little fluctuation in bacteria or mineral content — ready for industrial or consumer use without further treatment.

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Nanaimo Lakes and Haslam Creek will be utilized.

This has involved the drilling of test wells by International Water Supply Co., Jentzen Drilling Co., Seattle, and Pacific Drilling Co., Victoria. A caisson will be sunk and this will collect water through laterals extending into the ground in several directions. Need for a separate filtration plant has thus been eliminated. A six-mile stave pipe line will connect the caisson with the pulp mill, the water being moved through the operation of a series of pumps. This represents application of the Ranney Water Installation system. It is believed to be the first application of its kind in the pulp and paper industry, although it has been introduced in other industry projects, notably along the Ohio River.

Personnel Heading Project

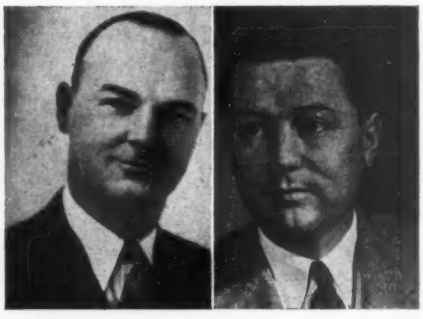
While H. R. MacMillan, president of H. R. MacMillan Export Co., has devoted a good deal of personal attention to the pulp project and Vice President E. Blake Ballentine has been nominally directing some of the preliminary phases, Clifford Crispin has been actively in charge of the development and he has been named as manager of Nanaimo Sulphate Pulp, Ltd. It is expected that in September he will go from Vancouver to the mill to make his headquarters there. Mr. Crispin has been with the MacMillan organization for several years, having previously been with Seaboard Lumber Sales. He was manager of new products development for the MacMillan company before taking over the pulp mill management.

Plant superintendent will be L. C. "Larry" Harris and technical supervisor, Donald Baker, both of whom have been close to the Nanaimo project since its inception through their association with the Howard Simons organization. Mr. Harris spent several years with other mills on the west coast and in the east before joining Simons, was assistant superintendent of the Bloedel mill at Port Alberni during its early period of operation. Baker was with B. C. Pulp & Paper Co. in various capacities from 1936 to 1940. During the war he was at the Valleyfield, Que., nitro-cellulose plant of Defense Industries, Ltd., and on returning to the coast in 1944 he was engaged to gather data for the Sloan Forest Commission.

The MacMillan organization's chief representative on the ground has been Jack Prescott, who has handled a variety of assignments for the company.

Among Mr. Simons' representatives at the mill site are Val Gwyther, chief construction engineer; G. C. Mackay, resident engineer; W. H. Hall, inspecting engineer; Bill Hetherington, Fred Hardin and Halsey Johnson. Most of these men were with the Simons organization when it carried out the construction of the 165-ton unbleached kraft mill of Bloedel, Stewart & Welch, Ltd., at Port Alberni, B. C., two years ago.

In addition to Project Manager Marion Freeman, the B. C. Bridge & Dredging Co. is represented by Roy Rudenskjold, field superintendent; E. D. Gillanders, piping superintendent; Ivor Tucker, electrical superintendent, and Mark Watson, mechanical superintendent.



CLIFFORD CRISPIN (left) new Manager of Nanaimo Sulphate Pulp, Ltd., Nanaimo, B. C., has been with the H. R. MacMillan Export Co. several years. L. C. HARRIS (right) who has been appointed Superintendent of Nanaimo Sulphate Pulp, Ltd.

Reinforced concrete has been used in the construction of most of the main buildings, the recovery unit and causticizing plants being housed in steel and transite structures, and the main office, time office and locker room and laboratory in wood and plywood, modernistically designed. The company plans to place emphasis on research and the laboratory will be exceptionally well equipped.

Wood Preparation Plant

The wood handling facilities are yet to be established. They will eventually comprise booming grounds, log haul, wood room containing whole log barker and chipper and chip storage bins. Most chips used at the Nanaimo mill will arrive there in that form from other mills, although the whole log chipper will be able to keep the plant in supply in emergency. Open barges will deliver the chips from outside, and a 5-ton cantilever grab bucket crane supplied by Colby Crane & Engineering Works will do the unloading. The crane will be equipped with a 1200 cubic foot hopper and a chain feeder to discharge the chips onto a 30-inch Chain Belt conveyor to a surge bin set ahead of the screens. All conveyor belting is being supplied by Dunlop and Goodyear.

A standard jackladder will transport logs from the pond to the whole log chipper and this is being built by Electric Steel Foundry Co. The chain and chairs will be of manganese steel. A new type of log barker designed by Mr. Simons and his staff will strip the logs at the top of the log haul. An 8-stage barker pump capable of 1400 psi. driven by a 1000-hp. motor will power the barker, and the whole logs in 25-ft. lengths will go to a Sumner Iron Works six-knife, 153-inch disc chipper designed to take logs ranging to 34" in diameter. The chipper will be fed by a special log retarder and driven by a 1500-hp., 277-rpm. EM synchronous motor.

A drag conveyor will pick up the chips, transfer them to a 60-inch belt conveyor, which will move them to the surge bin ahead of the chip screens. Chips from the surge bins will be fed to three Rotex chip screens built by Orville Simpson Co. of Cincinnati by rotary feeders, and the accepted chips will be conveyed on a 30-inch belt to storage bins while oversize chips will be retreated.

Pulp Manufacture

B. C. Bridge & Dredging Co. is building the seven chip bins of some 2000 units capacity to permit segregation of species as well as adequate storage. The bins will be discharged to a 42-inch belt by means of Link-Belt plate feeders driven by vertical radicon reduction units driven by 25-hp. motors. The chips will flow on a 42-inch belt, operating with a Merrick Weightometer, and discharged by tripper into the digesters from the floor above.

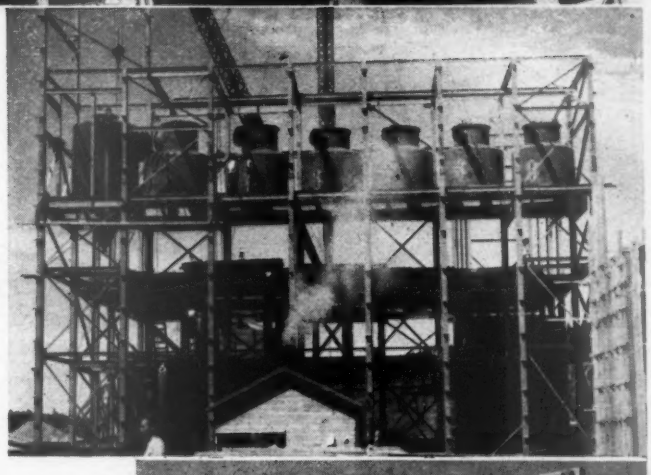
John Inglis Co. of Toronto is one of the main suppliers of equipment for Nanaimo Sulfate Pulp, Ltd. In collaboration with A. O. Smith Corporation, the Inglis organization is supplying the four stainless steel-lined digesters each with a capacity of 4700 cu. ft. and of a type not previously installed in Canada. Their dimensions will be 11½ by 54 ft. overall. Construction will be stainless sheet bonded to a steel plate. Each will be equipped with indirect heating and forced circulation designed and supplied by Electric Steel Foundry Co. Bingham pumps are to be used for circulation. Digesters will be blown by 10-inch Yarway blow valves remotely operated.

Foxboro will provide all digester cooking controls, panels and electrical panels.

Dominion Bridge Co. is building the blow tank, which is of conventional design, and the building elevator is being manufactured by Peterson & Cowan. A Western Gear Works vertical reducer powered by a 25-hp. motor, with controls by Foxboro, is being installed with the agitator. Pulp from the blow tank will be controlled by means of an American Blower hydraulic coupling unit governing the speed of stock pumps. Hot water for pulp washing will be reclaimed from blow heat by the use of Rosenblad spiral heat exchangers supplied by the American Heat Reclaiming Corp. Western Bridge & Steel Fabricators is making the blow heat recovery tanks, and boilers in the heat recovery system are being supplied by Vancouver Iron Works. Dominion Bridge Co. are structural steel fabricators for the whole project.

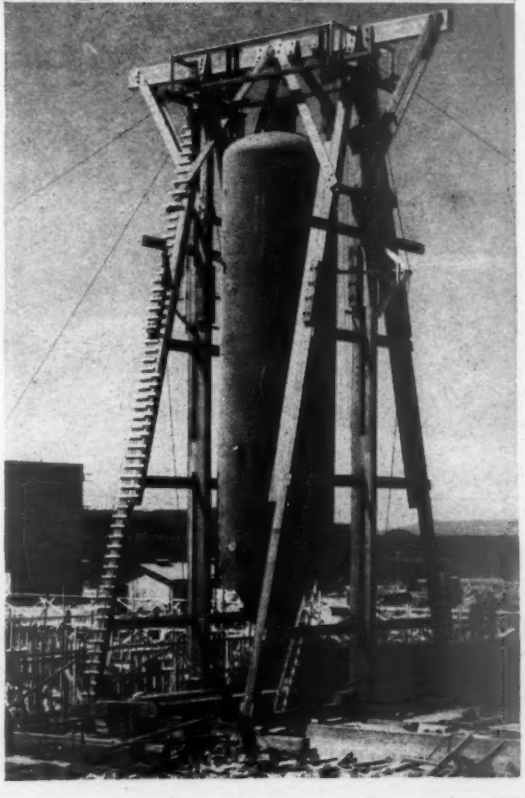
Jonsson knotters supplied by Canadian Ingersoll Rand will pre-knot the black stock and washing will be accomplished by a three-stage single drum Impco washing system supplied by Sherbrooke Machineries, Ltd. The primary washer will be equipped with an extractor roll, and drum speeds controlled by PIV units. The washed stock will be shredded and transferred to three high-density storage tanks, Foxboro supplying the controls. Bristol Co. is designing the stock blending system which will enable different cooks or species to be blended at the flat screen head box. Waterous flat screens in six lines will carry out the fine screening of the

INGLIS EQUIPMENT
AT
NEW NANAIMO MILL



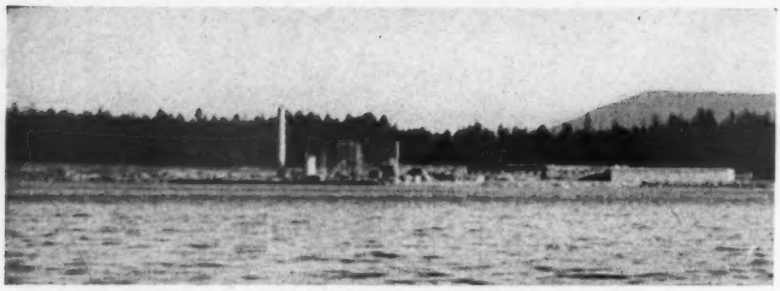
In the construction of the new mill for Nanaimo Sulphate Pulp Limited, Inglis has supplied four stainless steel-lined digesters, (A. O. Smith patented process). Each digester is 11½ ft. in diameter, 54 ft. high, fabricated of stainless sheet bonded to steel plate by a special welding process.

Also supplied by Inglis: Multiple-effect evaporator for black liquor, six-body sextuple-effect, and auxiliary equiqment: Fourdrinier, 178 inch wire and heavy 3 press section for Pulp Dryer, and various Process Pumps of Worthington Pump and Machinery Corporation design.



ENGINEERS *and* MANUFACTURERS
FOR THE PULP *and* PAPER INDUSTRY
AND ALL OTHER BASIC INDUSTRIES

JOHN INGLIS CO., LIMITED
TORONTO, CANADA
Vancouver Office **731 MARINE BUILDING**



PULP & PAPER took this picture of NANAIMO SULPHATE PULP, LTD., mill on Northumberland Channel, about five miles southeast of Nanaimo, B. C., on July 9. It shows long mill building at right, digesters show in center with plant and high precipitator tower just to the left.

This picture was taken during final hour of the annual Olympia, Wash. to Nanaimo International Cruiser Race, when over 100 of best known Pacific Northwest yachts raced through 100-yard wide Dodd Narrows, just three miles from the mill. Tidal stream here runs up to 10 knots an hour. Up this channel to right was the finish line at Nanaimo Yacht club. Over 600 yachtsmen from all over the west saw this view. Nanaimo, a famous boat haven in midst of numerous scenic islands, already boasting a population of 10,000, modern stores and other facilities, provides one of the most attractive home towns on the continent for mill employes.

pulp, and two deckers supplied by Sherbrooke Machineries, Ltd., will decker the stock, duplicate decker stock chests to facilitate stock changes and increase storage being tile-lined by Canadian Stebbins Engineering.

Alexander Fleck, Ltd., affiliated with Black-Clawson, Shartle & Dilts, will provide the Shartle agitators, driven by Radicon reducing units.

Most of the motors used throughout the plant are General Electric, with a few English Electric vertical units. Crane Ltd. is supplying most of the valves, including pulp stock valves. The valves and fittings are to be protected by Heresite coating supplied by Industrial Coatings, Ltd.

A multi-stage bleach plant will be part of the operation and the pulp will be pumped to a 35-ton stock blending tank equipped with Bingham blender driven by a 150-hp. motor through a vertical Western Gear reduction unit. The wood stave blending tank will have a tile-lined bottom.

Vacuum evaporators manufactured by John Inglis & Co. will concentrate to 55% solids the weak black liquor from the washing system, for which all pumps will be by Worthington and controls by Foxboro. A stainless tubed surface condenser will be used as a means of causing vacuum and supplying a source of hot water for the bleach plant wash water.

The Fourdrinier Machine

A Toledo Scale continuous weighing machine will automatically control the stock pumped to the machine head box.

A 178-inch Fourdrinier machine with an 80-foot wire is being supplied by John Inglis Co. in collaboration with Pusey & Jones Corp. Pneumatically loaded heavy couch presser rolls will assist in water removal.

Three main presses pneumatically loaded and of heavy construction to permit high nip pressures comprise the press section. The felts will be 48 ft. in length. Between the second and third presses two 60-inch pre-dryers will be installed to carry 50 psi. g. steam pressure. Paper Machinery, Ltd., is supplying the Flakt dryer of 175 tons capacity. There will be 13 decks at first with provision for an additional four.

Condensate removal system is being installed by Mason-Neilan. Pulp will be cut and stacked on a Lamb continuous cutter, and Lamb Grays Harbor will also supply the airfloat conveyor scale, press feeds and tying table. An 800-ton Baldwin-Southwark press will press the bales and these will be weighed on Toledo scales. Palletized pulp bales will be transferred on a 5-ton pneumatic-tired Ross fork truck to storage, and from there to box cars the sales will be transported by Clark carloader.

Visitors from European pulp and paper industry photographed by PULP & PAPER with hosts at Crown Zellerbach Corp. mill, Camas, Wash. Left to right—A. G. Natwick, Assistant Manager, Camas; Max Frhr. von Varnbuler, of Der Aschaffenburger Zellstoffwerke, Aktiengesellschaft, Aschaffenburg-on-Main, U. S. Zone, Germany; Wilhelm L. Mayer, Frankfurt-on-Main, agent for Bulkley-Dunton Organization, New York; Frank A. Drumb, resident manager at Camas.

Recovery and Power

A Combustion Engineering recovery furnace will provide most of the steam required, and this will be equipped with an economizer section. Concentrated black liquor will be the fuel. Two additional units will use hog fuel. These will be supplied by Combustion Engineering, too. Vancouver Iron Works represents Combustion Engineering Co., in B. C.

These boilers will each have a 3-cell Dutch oven (Bigelow-Liptak) using preheated air for combustion. Both forced and induced draft bins will be driven by Worthington Moore turbines, all three units being designed for 625 psi. g. although they will be operated at 350 psi. g. with no boiler superheat. Swartout supplies the pressure reducing and desuperheating stations. De-aerating heater for all feedwater is to be supplied by Permutit.

Engineering Co., New York, will supply the duplex oil heating unit which will be supplied by an 8000-barrel fuel oil storage tank.

To save all possible carryover from the recovery furnace a four-cell Cottrell precipitator is being installed. Only three of the cells will be equipped with electrodes. Precipitation Co. of Canada is the supplier of this apparatus. The exit gases from the precipitator will augment hog fuel boiler gas and discharge into a 12 ft. by 250 ft. acid proof tile-lined stack built by Rust Engineering Co.

Dorr Co. will provide the causticizing system. The sludge will be filtered on a 6 by 6 Oliver filter reburned in a 7-ft. diameter kiln. The kiln, which weighs 175 tons and consists of three cylindrical units each 91 feet long, was delivered by Canadian Vickers, Ltd., which operates in affiliation with Sandy Hill.

When in full operation Nanaimo Sulfate Pulp is expected to give employment to 225 persons. Cost of the project has been estimated by Mr. MacMillan at $16,000,000.

Electric power will be supplied by British Columbia Power Commission's Campbell River plant, which is also serving the Bloedel mill at Port Alberni.

German Industry Leaders Tour U.S.-Canadian Mills

Max Frhr. von Varnbuler and Wilhelm L. Mayer, both of pulp and paper industry in Germany, visited American plants of the industry, both in United States and Canada, during month of July. Herr von Varnbuler is president, in charge of technical affairs, of Der Aschaffenburger Zellstoffwerke, Aktiengesellschaft, at Aschaffenburger-on-the-Main river, U. S. Zone, near Frankfurt. This is one of that country's largest pulp and paper companies, heading four pulp mills, four paper mills, three small groundwood mills, a yeast plant, and four alcohol plants.

Mr. Mayer is an independent agent, having sold considerable Canadian and U. S. pulp to Germany under the Marshall plan. He is agent for Bulkley-Dunton Organization of New York. His residence is at Frankfurt-on-the-Main.

Mr. von Varnbuler, who arrived in this country by ship in June, met Mr. Mayer in Denver, Colo., July 5, at the precise hour planned.

IN THE NEW NANAIMO, B. C. MILL OF THE

NANAIMO SULPHATE PULP, LTD

LAMB-GRAYS HARBOR

EQUIPMENT

CUTTER-LAYBOY-BALING SYSTEM

WAS SELECTED FOR

QUALITY

AND

ECONOMY OF OPERATION

The 174" LAMB-GRAYS HARBOR machine will operate on 1000# stock and is completely automatic. The continuous cutter and layboy cuts and stacks sheets discharging to conveyors where stacks are made up into bales of proper weight. Bales are automatically fed to press and discharged from press for tying operations.

Completely Designed, Engineered and Manufactured by

LAMB-GRAYS HARBOR CO., INC.

HOQUIAM, WASHINGTON

Personals

SOUTH

HERE ARE TWO NEW REPRESENTATIVES of mill equipment companies in the South:

THAXTER W. SMALL (left), 607 North Patterson St., Valdosta, Ga., has been named Sales Engineer for Sprout-Waldron & Co., Muncie, Pa., makers of Sprout-Waldron Refiners. Territory includes Northeast as well as the South.

CLARENCE C. BROWN (right), of Georgetown, S. C., will represent H. Waterbury & Sons Co. Mr. Brown was formerly with IP mills at Georgetown and Panama City, Fla., and his brother, Sidney Brown, Jr., is Paper Mill Supt. at Big Island, Va., National Container plant.

H. STUART DANIELS, executive vice president of Union Bag & Paper Corp., was a recent guest star on WNBT in New York on National Broadcasting Company's television network. He appeared on "Natural Treasures," a show devoted to science and industry and on which he discussed paper and paper bags.

H. H. SEAMAN, president of Southern Pine Association and vice president of Kirby Lumber Corp., Houston, Texas, sailed aboard the S.S. ueen Elizabeth on June 30 to attend the Third World Forestry Congress to be held in Helsinki, Finland, July 10-20. Mr. Seaman is an official U. S. Government delegate.

CARL G. KRUEGER, who has served as supervisor of the Pisgah-Croatan National Forest, in North Carolina, has been named supervisor of National Forests in Texas with headquarters at Lufkin, Texas.

DONALD J. MORRISS, who was assistant supervisor of National Forest in Alabama, has been named supervisor of the Pisgah-Croatan National Forest with headquarters at Asheville, N. C.

ST. JOE PAPER CO. MEN (left to right): EARL HOBAUGH, genial Mill Supt. who recently recovered from effects of a broken leg; TOM S. COLDEWAY, Assistant Mill Supt., recently appointed to this post from Master Mechanic; CARROLL M. WARNER, has been promoted from tour foreman to Paper Mill Supt.; and JOHN KRAMER who has been promoted to Master Mechanic from the mechanical dept. of St. Joe Paper Co. at Port St. Joe.

S. L. TOWERY (left), has recently gone to Southern Paperboard Corp. at Port Wentworth, Ga. He was formerly superintendent of power house at St. Joe Paper Co.

OTHA WINNINGHAM (right), has been named General Superintendent of National Container Corp. mill at Jacksonville, Fla. He has been serving as assistant chief engineer. Following graduation from Mississippi State Collee he was with Southern Kraft Div. of International Paper Co.; Everett Pulp & Paper Co., Everett, Wash.; and Gaylord Container Corp., Bogalusa, La.

A. R.SHIRLEY, Georgia forestry commission director, resigned that post to become associated with the American Turpentine Farmers' Association, Valdosta, Ga. Acting state forester is Guy DeLoach.

ALBERT G. NAUDAIN as assistant to Leonard J. Doyle, vice president in charge of bag and paper sales, has been announced by Union Bag & Paper Corp. Mr. Naudain joined Union Bag upon his graduation from the University of Alabama in 1938.

DR. RALPH E. ADAMS, assistant to president Ed. A. Norton, of Coosa River Newsprint Co., Coosa Pines, Ala., has resigned to enter the investment field in Birmingham, Ala.

HAROLD H. YODER, vice president in charge of public relations for Gulf States Paper Corp. is an active member of the recently formed Tuscaloosa (Ala.) Camellia Club.

A. B. MONTGOMERY, formerly paper mill superintendent at Port St. Joe, Fla., is now at Gary, Ind.

HENRY B. BOSWORTH, who has served as supervisor of National Forests in Texas, has been named director of tropical research in Puerto Rico.

PAUL J. COOPER, a member of the Rhinelander Paper Co. staff, has been transferred to Atlanta, Ga., where he will be sales representative.

CARLOS CACIOPPO, Hammond, La., has announced the formation of Timberland Saw Co., which will serve as distributor for McCulloch chain saws in southeast Louisiana and all of Mississippi except the most northern 13 counties. Mr. Cacioppo has been active in this field for a number of years and is expert with the saw. His company serves as sub-distributor under Joe Brady & Associates, of Birmingham, Ala.

Cochrane Representatives

The Boiler Equipment Service Co., 686 Greenwood Ave. N. E., Atlanta 6, Ga., representatives for Cochrane Corp., Philadelphia, in Georgia and Florida for industrial water treating equipment and steam specialties have been appointed representatives for Cochrane for Alabama, less Mobile and Baldwin counties which are handled by Allan J. Harris Co., New Orleans. E. A. Brooks, J. E. Fearon, D. T. Sheffield, W. C. Morrison, and C. G. Acree are individuals covering this territory.

ROBERT AND COMPANY ASSOCIATES

96 POPLAR STREET • ATLANTA, GEORGIA

Consulting and Design Engineers to the

PAPER AND CHEMICAL INDUSTRIES

HAROLD O. MURDOCK, *Chemical Engineer*

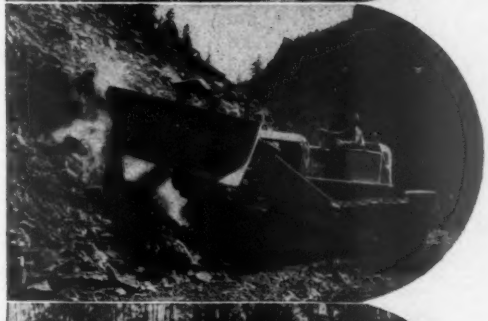
PROCESS STUDIES • DESIGN • POWER PLANTS • INDUSTRIAL WASTE DISPOSAL

You name the logging problem—

CARCO EQUIPMENT WILL SOLVE IT

Fast Decking?

A CARCO "R" Hoist equipped tractor coupled to a portable spar can do a fast job of decking from a clear cut or a prelog side —can be moved and reset in a hurry.



Road Building?

CARCO Hydradozers and Cabledozers build logging roads as you go. Both models in either straight or angle blade feature smooth, fast-acting, easily-adjusted blades.

Ground Skidding?

The CARCO "S" Winch makes light logging possible with small wheel and crawler tractors. There is a CARCO winch model for nearly every crawler tractor ever made.

Arching?

CARCO Log Carts are required equipment for small timber loggers. Stable, balanced and steady performers, they more than double the log hauling capacity of your tractor.

Call or write your tractor dealer today for CARCO equipment literature and specifications.

PACIFIC CAR AND FOUNDRY COMPANY

RENTON, WASHINGTON U·S·A

"The real objective of good forestry is to raise the economic level of the people."—J. M. Stauffer, Alabama State Forester.

HOW "B & A" SERVES MAINE

Wide Interest in New Pulpwood Rack Cars

The famed Bangor and Aroostook Railroad, serving northern Maine, has always been vital to the pulp and paper industry of the northeast country. But this year new interest attached to it because its new president is a man from the industry.

He is Curtis M. Hutchins, also president of the Dead River Co., nationally known pulpwood organization, and widely acquainted throughout the industry for his war work as chief of WPB's pulpwood procurement division in Washington. The industry still speaks of his outstanding work in the latter job, but it was no news to Maine men who had watched Mr. Hutchins since his graduation from Williams in 1928. Born in Boston 42 years ago, he studied forestry at the University of Maine then went into the pulpwood business, soon was a major factor in the Northeast. He became a director of coal companies, finally of Bangor & Aroostook, and his record was excellent as a Maine legislator. This year when Wingate Cram, son of B&A's builder and first president, wanted to retire as president, he and the other directors knew they had a man for the job.

Mr. Hutchins makes no claim to being a railroader. But he does believe that what is good for other businesses can be good for the railroad business. Operating on that premise, he has launched his five-point program. He is stepping up modernization, reorganizing administrative procedures, pushing a "develop Maine" campaign, emphasizing publicity and public relations, and cooperating with other New England railroads in solving mutual problems.

During a trip through Maine last month, **PULP & PAPER** asked old railroaders about the B&A. The general answer: "The new president is making things hum." In a smoking compartment this editor ran into a Boston man who had been brought into northern Maine in a hurry to see what his firm could do, and quickly, about expanding drive-yourself auto rentals in the towns of northern Maine. The idea was to get more salesmen to leave their cars at home, take the B&A from Bangor and hire autos in the towns along the route. Mr. Hutchins isn't overlooking any bets.

INSET—UPPER LEFT: Curtis M. Hutchins, new President of B & A, also President of Dead River Co., pulpwood producers.

B & A PULPWOOD CARS look like many others, but when it comes to unloading they are much different. Above shows the car being used in connection with an electro-hydraulic "car dumper" which tips the car. But it may also be unloaded in a normal position by lifting the car doors. The "dumper" was developed by Great Northern Paper Co.

Photo below shows cars being loaded at St. Croix from motor trucks.

Because, while it is true that pulpwood and newsprint are important in B&A's success (as recently as 1924 it was chiefly a logging road) they are no longer the chief factor. Forest products account for 26% of the 3.6 million tons of freight carried, and 11% of the revenue. But the renowned Aroostook potatoes contributed 32% of tonnage and 48% of freight reve-

are you having RIVET TROUBLE?

O-KNI-CO-LOK dis-assembled. Ordinary slitter knife is in center. Note small button on the O-KNI-CO-LOK which fits into any rivet hole on slitter knives of this type.

ELIMINATE IT WITH *O-KNI-CO-LOK*

Only seconds are required to assemble or dis-assemble the new O-KNI-CO-LOK slitter! These two operations are completed by means of a spanner wrench.

The projecting button shown on the O-KNI-CO-LOK above, slips into any of the holes designed for all rivet type slitters. Knife is held firmly in place and locked to the shaft. Nut continues to tighten as assembly revolves.

Order your O-KNI-CO-LOK slitters today and save time and money. Immediate delivery!

Method and ease by which knife may be assembled. Eliminates all rivet trouble.

12

THE OHIO KNIFE CO., CINCINNATI 23, OHIO
Gentlemen: Please send me without obligation specific data O-KNI-CO-LOK for Slitter Knives.

COMPANY_____

NAME_____

ADDRESS_____

The **OHIO KNIFE** Co., CINCINNATI, OHIO

THE MEAD SALES COMPANY
230 PARK AVENUE, NEW YORK 17, N. Y.
20 NORTH WACKER DRIVE, CHICAGO 6, ILL.

MEAD
pulp

DISTRIBUTORS OF WOOD PULP
BLEACHED AND UNBLEACHED
CHEMICAL AND MECHANICAL WOOD PULP

Came a whiff of smoke from a forest fire, and Paul Bunyan would order Sourdough Slim to mix up a batch of his quick-rising mess. No blaze could withstand Paul's invention of the first foam fire extinguisher.

A reproduction of this incident from the fabulous life of Paul Bunyan—the forty-fifth of a series—will be sent on request. It will contain no advertising.

ONE OF THE NEW 2000 HP DIESEL JOBS ON B & A ROAD. It is painted a brilliant silver and blue. Two passenger locomotives of this type, out of 14, are already in operation. In addition, B & A is adding eight so-called "branch line" engines.

nues. That doesn't mean Mr. Hutchins in his plans is kissing off forest products lightly by comparison. On the contrary, much of the new equipment is for the handling of pulpwood and finished forest products.

New Pulpwood Rack Cars

It was B&A, in combination with Great Northern Paper Co., which developed the new pulpwood rack cars which can dump 18 cords in less than four minutes. A hundred of these are already in service and another hundred are building at the Magor plant in Passaic, N. J. Also, the road's newsprint car is a B&A-Great Northern development, and several of the new diesel locomotives were bought with forest products in mind.

Biggest of the new fleet is the big General Motors 2000-hp. diesel engine. It is one of 14 new diesel-electrics to add to the dozen now operating. The B&A can operate seven months of the year without steam, using the latter only during the peak potato shipments in winter. Also on order are stainless-steel luxury coaches for the Aroostook Flyer.

Unlike many railroads today, the B&A makes money. Some conservative State of Mainers think it makes too much. Mr. Hutchins does not think so. Says he: "Last year was the most profitable year B&A ever had or ever will have—$2,384,000. The first quarter of 1949 has also been a profitable one. But this profit was through a number of freak circumstances that probably never will be combined again."

Mr. Hutchins referred to two terrific potato crops, combined with government shipments as late as October, November and December of last year.

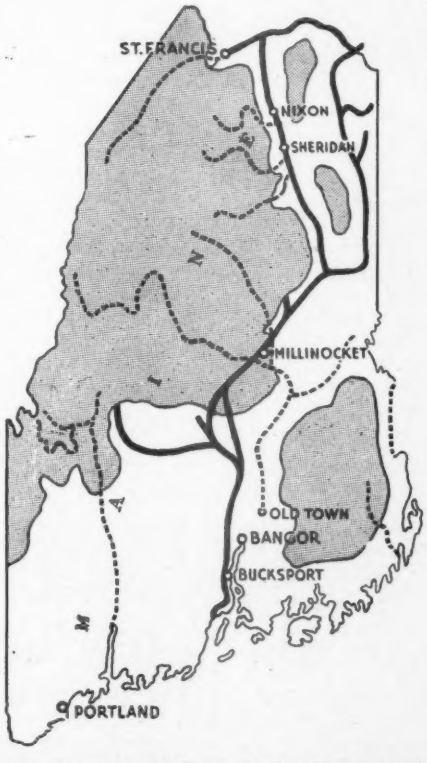
Forest products shipments were also higher and if B&A made a lot of money it was "only sharing in the unprecedented prosperity which came to Maine," Mr. Hutchins points out.

To farmers who believe B&A makes too much money the new president explains in farm language. He will tell them: "We have about $40,000,000 invested in the railroad and owe on that property through mortgage bonds and equipment trusts about $16½ million. On that $40 million investment we made $2½ million, roughly. Let's take three ciphers away from those figures and compare it to a farm in which a potato grower had invested $40,000 and on which he had a $16,500 mortgage, and after working it for a year in an era of prosperity, made $2500. That $2500 would not be considered excessive, and I am sure many would have expected a lot more during the wave of prosperity."

About improvements he says: "The next shipping season with all of our units in operation should see the best and fastest service we have ever had. We have tried to buy during the last year or so all of the things we felt we would need during the next few years. We bought some more rack, self-dumping, pulpwood cars which are unique. People all over the country are constantly inquiring about them and asking for plans and pictures. They save many man-hours in unloading pulpwood because a car can be set, topped up and dumped within three to four minutes. The extra cost to them is worthwhile because we get a turn-around and need fewer cars to do a good job. We also saw that we would need new passenger cars and this was a good time to buy them. There will be as good coach travel as in any section of the country, and we have tried to keep the standard of food on our dining cars high. And we are planning to have radio telephones."

One of the things the new president did was to ask for suggestions from employes, who are paid a substantial percentage of the first year's saving accruing from a suggestion. Thus far, 44 out of 166 suggestions have proved out.

Important to the B&A, to the forest products industry of northern Maine, and to the Northeast in general is the fact that the railroad has restored its cash position to a healthy one. All the president of B&A asks of his customers is that they recognize that the management intends to operate in what he calls "the most aggressive, modern, efficient way that it can, and give the best possible service at the lowest possible price."



ALL OF MAINE PRODUCES PULPWOOD OF ONE KIND OR THE OTHER, except for a few parks. The shaded areas are so-called "wild lands" where pulpwood is cut from camps back in the woods and either driven by water direct to the mills or driven and railed. The rest of the state is the purchased wood, or market wood, area.

The principal river drives for pulpwood are indicated by dotted lines. The Bangor & Aroostook Railroad is shown by continuous heavy line.

Reports on Thinnings And Chemical Treatments

Recommendations on thinning young slash pine are embodied in a report issued by Southern Forest Experiment Station, New Orleans, of which Chas. A. Connaughton is director. The report, prepared by Henry Bull, gives thinning amounts to give a desired stand according to number and size of seedlings or trees in the site.

The station, in a companion pamphlet, makes recommendations for protecting southern hardwood logs while in storage, using (among other things) Benzene hexachloride (Dupont, Chpman Chemical, and Pennsylvania Salt companies); Pentachlorophenol (Chapman Chemical, Monsanto Chemical companies; Cresylic acid (Koppers Co., Allied Chemical & Dye, and others); and various coatings.

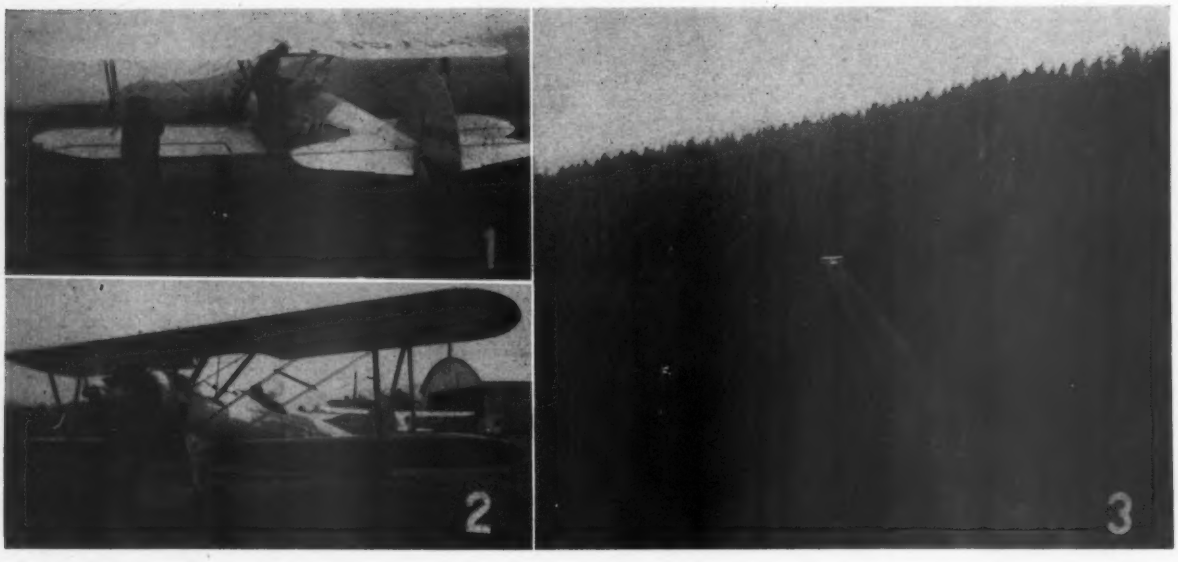
Hardwoods Encroaching

Aggressive encroachment of hardwoods is revealed in Mississippi by a recently completed re-survey of that state, results of which are given in Forest Survey Report No. 59, issued by Chas. A. Connaughton, director, Southern Forest Experiment Station, New Orleans.

The report, prepared by Wm. A. Duerr, shows that by comparison with the original 1932-5 survey, commercial stands in quality hardwoods have declined, pine sawlog volume has declined, but total growing stock in south Mississippi has increased 11%. Total state volume of growing stock declined.

PLANES SCORE 95% BUG KILL

Huge Spraying Project Succeeds in Oregon



SPRUCE BUDWORM spray project at Springfield, Ore., base as photographed by PULP & PAPER. 1. Loading one of the Central Aircraft Spearman planes with D.D.T.-oil spray solution from Pennsalt. This is one of two metered loading stations taking off from a trailer tank at Springfield airport. 2. Front view of plane showing spray rod beneath lower wing. 3. A swath of spray streams out behind as plane skims over tree tops.

Results of a new pioneering airplane spraying project in Oregon, combatting the destructive spruce budworm, have been excellent this summer. It was conducted on a big scale over 266,000 timbered acres and a 95% kill is reported.

This includes 100,000 acres of federal forests on Mt. Hood slopes. This followed successful spraying of 166,000 acres in the Springfield, Ore., area, accomplished as follows:

The Oregon State Forestry Department, firmly flanked by leading private timber owners concerned, and with the Bureau of Entomology and Plant Quarantine providing technical assistance, went into action with DDT dissolved in oil—one gallon per acre—and sprayed from 15 airplanes and five helicopters. The infested area is in the western foothills of the Cascade mountains around Springfield, Ore. In this area is the greatest concentration of woods industries in the world, including a new pulp and board mill.

The spruce budworm which generally reaches devastating proportions in its third year was first discovered west of the Cascade's summit in epidemic proportion last year in the Springfield area. A survey was immediately launched conjunctively by the state and federal officials to determine the severity of the infestations. Results indicated that 126,000 acres were infected, including 15,000 acres which had been infested three years, although undetected. Here some trees had already succumbed.

Late in 1948 a committee, composed of state, private and federal personnel, was set up to determine control of spruce budworm in this area, which contains timber of as high value as any in the state. This defoliator insect was also found attacking coniferous trees in some 100,000 acres on the eastern slope of Cascades in vicinity of Mt. Hood, some 50 miles east of Portland. Not only was this a hazard to trees of the area, but also to the Mt. Hood recreational area and Portland water supply.

Spruce budworm infestation has been known for many years in Eastern U. S. and Canada where untold millions of feet of timber have been killed. In 40 years this insect has killed 130 billion feet in Eastern Canada, which is only 15 billion less than the total amount of lumber cut from all species during the same period in the State of Oregon, now the No. 1 lumber state of the Union. Infestations in fir in Eastern Oregon became known in a small outbreak in 1931. The insect adapted itself to the Pacific Coast environment and has carried on until now 1,250,000 acres of Eastern Oregon forest lands are infected. Value of Oregon infested timber has been estimated at $31,500,000. An infestation in Forest Service and private timber out of Kinzua, Ore., was aerial sprayed in 1948. This cooperative project was participated in by private, state and federal foresters. Costs were about $2 per acre for aerial spraying with the DDT-oil solution.

But the recent bigger control project cost considerably less—$1.07 per acre—part of this cost being the application price contracted by Central Aircraft Inc. of Yakima, Wash., and Central Helicopter of Tacoma, Wash., and the other portion being the cost of the chemical solution, supplied by Pennsylvania Salt Mfg. Co. of Washington, which is now being marketed under the name of Penco Forest Insect Spray.

This chemical, composed of one pound of Pennsalt DDT to one quart of General Petroleum Corp. solvent and three quarts of G.P.C. fuel oil, spread one gallon per acre, was provided by Pennsalt in mixed solution ready for application. The solvent is used to enable one gallon of solution to carry one pound of DDT.

The chemical, shipped by rail tank car from Pennsalt's Portland, Ore., plant, was transported from a central rail siding to airports or improvised landing fields used as bases for the project. By means of a gas-powered pump two planes were loaded simultaneously by hoses, each leading off from a metering device which determined how much was loaded in each plane. At one of these two stations, another hose was provided for gassing up the planes.

Last year's trial spraying determined the desirability of Spearman bi-planes for spraying infested timber. These planes are equipped with 450-hp. radial engines providing a needed margin of safety and

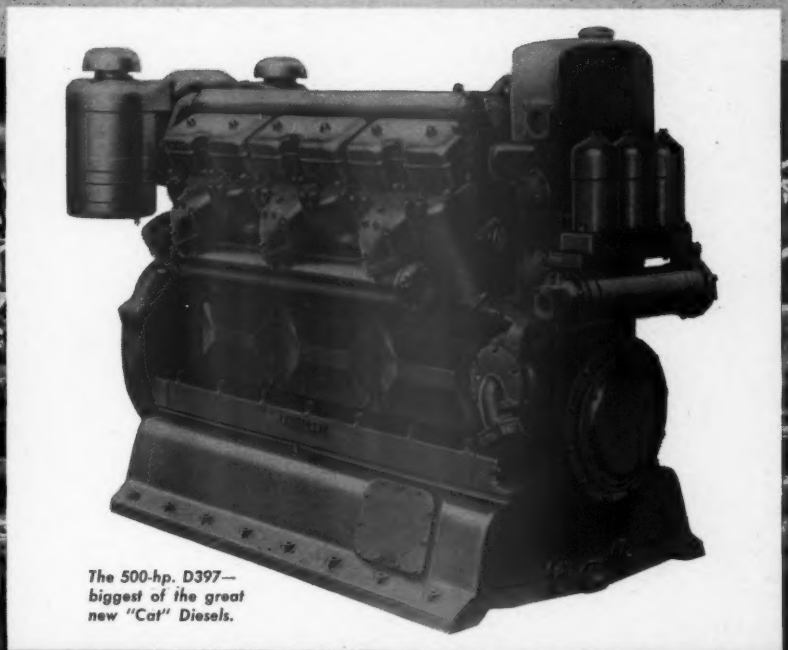
- MEETINGS -

Conference on Conservation and Utilization of Resources (includes forests, land and water) United Nations, Lake Success, N. Y. ..... August 17-Sept. 6

Society of American Foresters (Annual Meeting) — Olympic Hotel, Seattle, Wash. ..... Oct. 10-14

Western Forestry & Conservation Assn. — Multnomah Hotel, Portland, Ore. ..... Dec. 7-10

New BIG YELLOW ENGINES BUILT TO HANDLE BIG JOBS



The 500-hp. D397—biggest of the great new "Cat" Diesels.

LOGGERS and sawmillers who use power equipment have learned from long experience that they can depend on "those big yellow 'Caterpillar' Diesel Engines." They've proved themselves in yarders, cranes, hoists, sawmills, camps, locomotives and other lumbering machinery.

Now you can power even bigger machines—with new, bigger "Cat" Engines and Electric Sets. In addition to the present engines, four great new "Caterpillar" Diesels, ranging up to 500 hp., and "Cat" Electric Sets, generating up to 314 kw., are now coming out of the world's finest, most modern engine manufacturing plant. Every one is designed to burn low-cost, non-premium fuels—assuring substantial savings. Every one is given a closely supervised dynamometer run to assure proper break-in and full horsepower output.

When you buy new equipment, specify "Caterpillar" Diesels for power. When you consider replacing the power in your present equipment, call on your reliable "Caterpillar" dealer. Meantime, SEND IN THE COUPON.

CATERPILLAR TRACTOR CO., San Leandro, Calif.; Peoria, Ill.

CATERPILLAR
REG. U. S. PAT. OFF.
DIESEL ENGINES • TRACTORS
MOTOR GRADERS
EARTHMOVING EQUIPMENT

CATERPILLAR TRACTOR CO.
Dept. PP-8, Peoria, Illinois
Send me specifications on the new "Cat" Diesel Engines and Electric Sets.

Name_____

Address_____

power for continuing close to tree tops even while climbing.

Effective spraying is carried on at 50 to 100 feet above trees, resulting in an average of 100 acres treated with each plane load of chemical. About 300 acres per hour is sprayed by each plane. Spray booms on planes are 25 to 30 feet long and a strip 100 feet wide is covered with each pass.

Although the project lasted 30 days, there are only about 10 days in any area in which treating can be carried on effectively—when larvae are out on the branches just before pupating. Spraying started at lower elevations, where larvae were advanced and continued into higher area.

Moths from the area have recently infected an additional 40,000 acres in the vicinity of Wendling and Marcola, Ore. About one-third is O & C timber and the rest is in private ownership of Weyerhaeuser Timber Co., and two other firms. This area was also sprayed.

Costs for the original spraying project of 126,000 acres was divided as follows: On private lands, 50% paid by the state; 25% by the owner; and 25% by federal government.

The state forestry department organized the project, let contracts to Pennsalt, Cenral Aircraft and Central Helicopter and provided supervisory personnel. The U. S. bureau of entomology provided technical assistance and the state directed application. A base chief functioned at each landing field keeping record data and there was a checker in the woods to observe flight pattern, the spray kill, and gathering data concerning spray pattern by glass slides placed in the treated area. The checkers also observed weather conditions, keeping in contact with the base by radio.

Oregon State Forestry department had 20 men on this project, headed by John B. Woods, Jr., assistant state forester.

Technical assistance for the projects was provided by Robert L. Furniss, head of Portland office of the U. S. Bureau of Entomology and Plant Quarantine. Al Ausve was chief pilot for the West Slope project. Al Fisher, Oregon State Forestry Department, followed spraying observations as aerial observer.

As the West Slope project neared completion, federal appropriations were made available for treating the Mt. Hood infestation.

Application was contracted to Ace Flying Service of Salem, Ore., using Stearmans, BT19s, and one B18, which is a larger plane of large load capacity.

Most of the infected area was in U. S. Forest Service lands, and some in privately owned fringe lands. In general, payment for treating the areas in private ownership was on the 50-25-25% basis, and federal payment was made for Forest Service lands. Extensive checks in the west side area indicated 95% kill and similarly good results were recorded in the Mt. Hood area.

Next year more than 500,000 acres of timberland in Oregon will have to be sparyed, it is asserted, if the budworm is to be kept under control.

MISSISSIPPI MEETING

Program advancement of the Southern Pulpwood Conservation Association, with emphasis on progress in forestry in Mississippi, was reviewed at the summer meeting held in Jackson, Miss., in June. Ray F. Weston, chief forester for Hollingsworth & Whitney, Mobile, Ala., past president of the association, presided over a banquet, followed next day by a field trip.

R. D. Morrow, Brandon, Miss., national chairman of the American Legion's agricultural and forestry committee, was guest speaker. He spoke of the development of conservation program by the legion, recently initiated on a national basis. His offer of cooperation with the association was accepted by Chairman Weston, who pledged the aid of member mills and shippers at the local level. Mr. Morrow is prominent in Mississippi politics, having served as campaign manager for U. S. Senator Stennis.

"We in the South have such an opportunity to practice forestry because of favorable growth conditions that it should be a personal thing with each of us to take full advantage of it," declared Henry J. Malsberger, general manager, in reviewing association activity. Referring to a trip in the Northeast, he reported having seen lands cut over 35 years ago that now still did not have pulpwood-sized trees, whereas in the same period two "crops" could have been taken in the South.

Members of the association are responsible for 85% of total tree planting activity in the South, said Mr. Malsberger. The pulpwood industry brought about the

MISSISSIPPI FORESTRY MEETING:

AT UPPER LEFT: Ray F. Weston (left), Chief Forester for Hollingsworth & Whitney, Mobile, Ala., who presided at banquet, and James W. Craig (right), Consultant of Jackson, Miss.

AT LOWER LEFT: Fred Merrill (left), Dealer of Zachery, La.; and R. D. Morrow, Brandon, Miss., who spoke on American Legion program.

CENTER GROUP examining new Illinois Central R.R. seedling planter (l. to r.): Henry J. Malsberger, SPCA, Gen. Mgr.; W. M. May and John Guthrie, Illinois Central Foresters, and Dawson M. Jennings, SPCA Area Forester.

AT RIGHT: A. K. Dexter (above), Woodlands Mgr. for International Paper Co. at Canton, Miss., and H. C. Coulter (below), Florida State Forester.

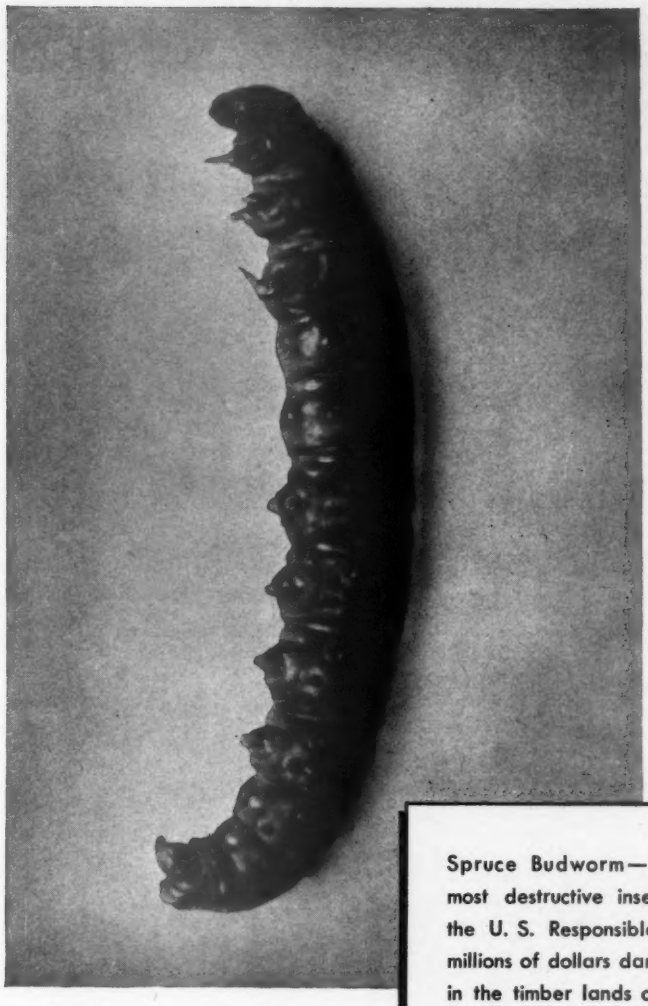
THIS IS THE WORM

THAT KILLS THE TREES

THAT GIVE THE PULP

THAT MAKES THE PAPER

PRODUCED BY NORTHWEST INDUSTRY



Spruce Budworm—third most destructive insect in the U. S. Responsible for millions of dollars damage in the timber lands of the Northwest.

Pennsalt ammunition makes mass attack on pulp and paper enemy

In May and June of this year, federal, state and private interests—armed with a new DDT insecticide made at Pennsalt's Portland plant—saved millions of dollars worth of Oregon timber land from damage by the destructive Spruce Budworm.

The new insecticide, a Penco forest insect spray, was sprayed over 260,000 acres of spruce and fir by 25 planes flying 50 feet above the tree tops. Mortality rate among the larvae of the budworm was 97%.

Thus Pennsalt, which for a generation has made caustic soda and liquid chlorine for the Northwest pulp and paper industry, gives another product and another service to that industry. Pennsalt liquid chlorine, caustic soda and many Penco insecticides are made in the Northwest for the Northwest.

PENN SALT
chemicals

PENNSYLVANIA SALT MANUFACTURING COMPANY OF WASHINGTON

TACOMA, WASHINGTON • PORTLAND, OREGON • LOS ANGELES, CALIFORNIA

planting of 56 million seedlings the past season of which 11½ million were donated to small landowners.

The industry replaced 62% of the trees cut to furnish pulpwood during the year.

A panel discussion had the following participants: Russ S. Andrews, International Paper, Panama City, Fla. (moderator); A. W. Pitts, dealer, Pittsview, Ala.; James W. Mustin, counsel for Gulf States Paper Corp., Tuscaloosa, Ala.; Fred Merrill, consulting forester-dealer, Zachery, La.; L. J. Risch, Jr., Gaylord Container Corp., Bogalusa, La.; Earl Davis, dealer, Lake, Miss.; and Homer W. Smith, dealer, Brookhaven, Miss.

Mr. Pitts gave details of landowner education in forestry and reported tops of trees converted to pulpwood following sawmill logging.

Details of a successful school essay program maintained by the Tuscaloosa Paper Company were reported by Mr. Mustin. Prize winners won bonds and a trip to Tuscaloosa.

Successful combination of consulting forester practice and pulpwood shipping was described by Fred Merrill. He seeks out forest owners, charges them 25c per cord for pulpwood taken from thinnings on markings made and checked by him. The producer pays 25c per cord for services in lining up stumpage but receives full mill price for his deliveries. During the past 12 months, 52% of the Merrill production came from marked trees, 28% from tops, 8% from owners who did the work themselves with Merrill guidance, and 12% was unclassified.

Mr. Risch outlined work done in "selling" the new Mississippi cutting restriction law to owners which included distributing 5,000 copies of the act.

Details of meetings in which producers, labor, and landowners participate were furnished by Mr. Davis. Mr. Smith told how he cuts 6,000 cords in a year of which 85% was selected from the stand.

The school program of Hollingsworth & Whitney was described by Mr. Weston. His mill goes to the grammer grades (the Gulf States Paper Corp. goes to the high schools) with motion picture educational programs.

The evening program was attended by 175 persons. The field trip included 165, and wound up at Roosevelt state park for a barbecue lunch. Forestry management sites visited included lands owned by Jack Stuart; the Stewart, Farris & Myers Lbr. Co.; U. S. National Forest, and International Paper Co.

Courses Are Urged For Logging Engineering

Special university courses in logging engineering in Canadian universities were urged by J. O'Halloran, chief engineer, Anglo-Canadian Pulp and Paper Mills, Ltd., Quebec, in a paper delivered to the Engineering Institute of Canada.

Mr. Halloran said the importance of the pulp and paper industry justified such courses combining forestry, mechanical and civil engineering in the proper proportions to provide an engineer who could be applied to best advantage in the woods.

HER IS A VIEW OF TYPICAL ENGELMANN'S SPRUCE in Colorado national forest, which is being killed by bark beetles and which a group of Rocky Mountain region newspapers now propose to use as raw material for a newsprint and kraft pulp mill. The Columbine Development Co., Grand Junction, Colo., made the announcement of plans through the Grand Junction Sentinel. (See page 60).

Union Bag Nursery

As part of its program of "growing more trees for tomorrow," Union Bag & Paper Corp. has opened a forest nursery at the site of its Sapelo Forest, 45 miles south of Savannah, which this year will produce one million pine seedlings for planting on company land and for distribution to other private land owners. During the 13 years Union Bag has operated its plant at Savannah, the company has planted on its land and distributed to the other land owners approximately

PRODUCTION OF SEEDLINGS in the 19 southern states' nurseries during the 1948-49 season has been placed as between 156 and 160 million by the Southern Pine Association. This compares to 98.4 million seedlings in 1947-48 but was 23% to 26% less than previously estimated, and not enough to meet the demand. The 1949-50 crop is estimated at 200 million seedlings.

Penn Salt Delivers

Liquid caustic soda from Portland, Ore., plant of Pennsylvania Salt Manufacturing Co. of Washington has been delivered to pulp mills of Oregon and Washington for the past few months by tank truck, as well as by the older rail car shipment. Truck shipment has been found to be of distinct advantage to purchasing mills. The caustic soda is loaded hot at the plant and is still warm when unloaded, thus eliminating expense and bother of unloading from tank cars, involving time of personnel and heating the liquid to facilitate unloading.

Three special-built truck-trailers haul the caustic soda. The first of these units has capacity of 3200 gallons and is now used for local hauls. The other two have capacity of 3300 galolns per load. Each unit is equipped with pump for unloading.

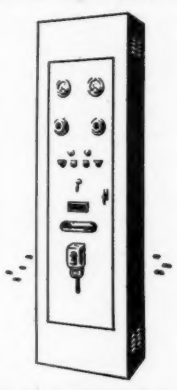
One of a Series

from Western Precipitation Corporation—pioneers of the commercial application of COTTRELLS *and now selling* COTTRELL *recovery equipment in all parts of the U.S.A. and foreign countries.*

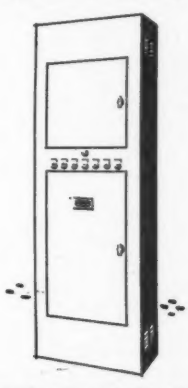
Various Methods of Energizing COTTRELLS *Make Experience a Vital Factor*

The many and varied factors affecting the operating efficiency of a COTTRELL Precipitator make experience and "know how" of the greatest importance in designing and installing COTTRELL equipment. Western Precipitation Corporation—*the organization that pioneered the commercial application of* COTTRELLS—has had over 39 years of first-hand experience in developing and perfecting the various elements that make up a complete COTTRELL installation, and these years of experience assure maximum performance from every Western Precipitation COTTRELL installation.

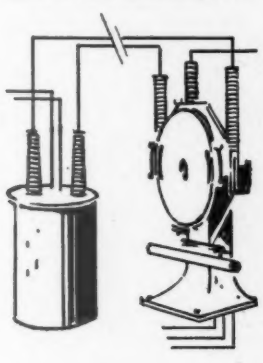
For example, the equipment for energizing Western Precipitation COTTRELLS include such features as the following...



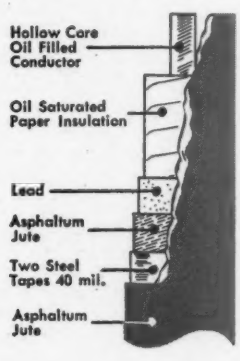
RECTIFIER SWITCHBOARDS—are of the Enclosed Cubicle type with flush-mounted meters, push buttons, selector switches, and indicating lights. The cabinet door and rectifier control circuit are interlocked. Rectifier and transformer contactors, instrument transformers, tap switches, terminal blocks and other auxiliaries are mounted inside the switchboard cabinet.



RAPPER AND POWER PANELS—are of the same external appearance as rectifier switchboards and can be installed beside rectifier switchboards to form a uniform and continuous switchboard installation. The cabinet is divided into two compartments—one containing AB breakers for control of all individual rectifier and signal circuits—the other containing all rapper controls and timers.



RECTIFIERS—for either full or half wave rectification. Mechanical rectifiers of the solid disc type are supplied with Radio Interference Correctors and Inductive Type Automatic Polarity devices. The Automatic polarity device has no commutator or brushes contacting high speed rotating parts. High voltage switch gear with interlocking control units is available.



HIGH VOLTAGE CONNECTIONS—between the rectifiers and the COTTRELL may be either special high voltage petrolatum-filled lead and steel-covered cable with pothead terminal connections, or of rod-and-bus-duct construction.

Watch for the next in this series which outlines the various* COTTRELL *electrode systems available from Western Precipitation Corporation.

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ENGINEERS, DESIGNERS & MANUFACTURERS OF EQUIPMENT FOR COLLECTION OF SUSPENDED MATERIALS FROM GASES & LIQUIDS

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Western Precipitation can design COTTRELLS to operate at any desired efficiency, for *any* capacity, to collect virtually *any* solid or liquid suspended in a gas, whether hot or cold.

Do you have these helpful COTTRELL *booklets?* This literature answers many questions concerning COTTRELL equipment. Free copies will gladly be sent those interested. Ask for booklets C101 and C103.

Personals

NORTHEAST

Five Executives Promoted At Kodak Park

Promotion of five Eastman Kodak Co. executives was announced recently by Charles K. Flint, vice president and manager of Kodak Park, Rochester, N.Y. The men and new titles are:

Donald B. Kimball, general superintendent of paper departments.

John P. Helphrey, Jr., assistant general superintendent of paper departments.

Francis B. Thorne and John L. Patterson, assistant superintendents of chemical plant; and Joseph F. Burns, purchasing agent, Kodak Park.

Mr. Kimball joined Kodak in 1928 as a supervisor in the company's paper mill. He is a graduate of M.I.T. Mr. Helphrey, a graduate of Washington State College, began work as a chemist in the Kodak Park paper mill in 1929.

Mr. Burns attended Rochester schools. He became a supervisor in the purchasing department at Kodak Park in 1913.

CLARENCE E. LIBBY, Syracuse, N. Y., head of the department of pulp and paper manufacture at New York College of Forestry, Syracuse, was awarded the professional degree of chemical engineer at June commencement exercises at the University of Maine. Mr. Libby, born in 1892, in Benton, Me., graduated from the U. of Maine in 1916 with a bachelor of science degree in chemical engineering. During World War I he was an explosive research chemist at Aetna Explosives Co., Emporium, Pa., where wood pulp was used for the first time in manufacture of explosives. As chief chemist of Bayless Paper Mfg. Co., Austin, Pa., he established the Austin Chemical Co. for utilization of sulfite waste liquors.

R. S. ARIES (left), Brooklyn Consulting Engineer, recently looked over in preliminary way possibilities for mill development in North Idaho and Montana for "an eastern firm" and then went to Guatemala on another survey (see story on Page 60).

SIMON POSEN (right), Chemical Development Engineer with Gilman Paper Corp., 630 Fifth Ave., New York, with mills at Gilman, Vt.; Howland, Me., and St. Mary's, Ga. Graduate of Syracuse and researcher at Appleton Institute, he was OPA wartime pulp prices chief and later with Rayonier.

CHARLES GRONDONA (left), formerly with Schweitzer and Crown Zellerbach, has been appointed Manager of Operations for the four mills of Hudson Pulp & Paper Corp. in the Northeast and the South. SAM SIEGEL (right), formerly manager of Hudson's Southern Division at Palatka, Fla., has been made a Vice President, in charge of insurance and purchasing for all plants, and has moved to New York.

RICHARD C. DOANE, vice president of International Paper Co., and Miss Mary Goodfellow, of New York and Montreal, were married in mid-June at Christ Church, N. Y. Mr. Doane, a graduate of Yale, was, until recently, general manager of Canadian International Paper Co., Montreal. The bride is a well-known designer of hats. The couple will reside at 444 E. 52nd St., New York City.

ROBERT H. EVANS, secretary and member of board of directors of Riegel Paper Corp., New York, will take a vacation in August in Guatemala. Mr. Evans is by way of being a "fan" and an expert on that country and has written several articles about it.

ROBERT L. RICHARDS, who started with Du Pont as an operator at the Buffalo plant in 1923, has been named general manager of the company's Rayon Department in Wilmington, Del. He succeeds Benjamin M. May, who retired after 46 years with the Du Pont organization. A native of Philadelphia, Mr. Richards is 50 years old. Andrew E. Buchanan, Jr., became assistant general manager of the department.

U. S. PRICES OF DISSOLVING WOOD PULP

Prices are per 2,000 pounds, air dry basis (10% moisture content), freight equalized for gross weight on respective Atlantic Seaboard or Gulf ports through Feb. 1947. Thereafter prices are f.o.b. producing mill, with full freight allowed to consuming plants.

	For Regular Viscose	*For High Tenacity Viscose*	*For Acetate & Cupra Rayon*
May 1938	$ 85		
Feb. 1939	75		
Apr. 1940	80		$100
Jul. 1940	85	$100	100
Jul. 1943	85	100	110
Apr. 1944	95	100	110
Jan. 1946	107½	112½	117½
Nov. 1946	122	127½	138½
Feb. 1947	139	147	158
Dec. 1947	149	158	172
Mar. 1948	157	167	182
July 1948	164	174	190
June 1949	159	168	178

HAROLD C. KINSEY, president of Cameron Machinery Co., Brooklyn, died in June at his home at 58 Willow Street, Brooklyn. One of the most unusual figures in the allied industries, Mr. Kinsey was formerly head of the H. C. Kinsey & Co., book publishers, and was still a publisher at the time he became a director of Cameron. He sold his publishing firm to Putnam's in 1943. Mr. Kinsey was a past president of the American Association of Booksellers. He was 67.

KENNETH L. MOSES has joined Champion-International Co., Lawrence, Mass., as assistant to *J. F. RAICHLEN,* vice president in charge of sales.

LOIS HANS, formerly with Hercules Powder Co. and active as the long-time secretary of the Delaware Valley technical section, has taken up new work in the laboratory of the St. Regis Paper Co., mill at Deferiet, N. Y.

V. WARD SMITH, who has been assistant director of sales since 1947, will henceforth concentrate on "Cordura" high-tenacity rayon sales and all indirect sales activities in the rayon division of DuPont Co., Wilmington, Del. *FORD B. DRAPER,* formerly manager of staple sales has been named an assistant director of sales to take charge of textile rayon and staple.

E. DUANE STEWART of West Virginia Pulp & Paper Co. received the Charles T. Main award at the 69th annual meeting of ASME in New York City this summer.

Pusey & Jones Machine For Mill in India

The Pusey and Jones Corp. has been awarded the contract for a 226-inch Fourdrinier machine for the first newsprint mill in India. The plant is now under construction for National Newsprint & Paper Mills, Ltd. (Nepamills), Chandni, Central Provinces.

It will be the first newsprint mill in the world based on a mixture of bamboo pulp and pulp from a deciduous tree called salai, both available in large quantities in the provinces. Initial capacity will be 100 tons a day.

Engineering and purchasing are being handled by Ebasco Services, Inc., New York. Complete plant equipment is being purchased in this country.

W. C. Lodding Visits Northwest Mills on First Trip in Area

Woodrow C. Lodding, president and treasurer, Lodding Engineering Corp., Worcester, Mass., made his first trip to the Pacific Northwest in July and visited paper mills in Oregon and Washington. He had previously visited California but not the northern states.

The Lodding company has just issued an attractive 24-page descriptive booklet on its doctor blades and other products and its services to the industry, and mill officials will be sent complimentary copies on request to the company in Worcester, Mass.

for the big job
...or the small

there's an SKF pillow block for every application

SKF Spherical Roller Bearing Pillow Blocks, in a wide range of standard sizes, are designed for bearing protection under various loads and speeds.

In industrial and marine equipment of all kinds, they keep SKF Bearings rolling smoothly, continuously and economically . . . seal the bearings against dust, scale and water . . . send maintenance costs 'way down.

To insure long trouble-free operation, specify SKF Bearings by ordering SKF Pillow Blocks to match. SKF Industries, Inc., Philadelphia 32, Pa.

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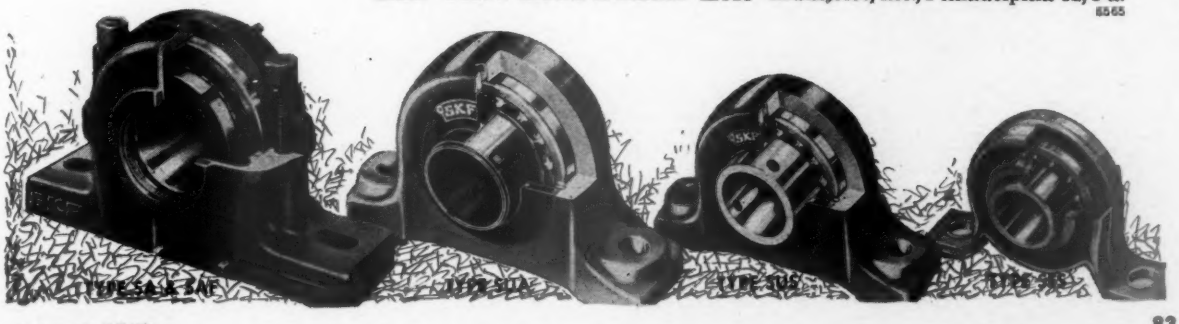


When *Quality*

NOPCO PAPER CHEMICALS

. . . for Nopco Paper Chemicals are specifically designed to meet the varied needs of pulp and paper manufacture—to help produce paper that promotes customer satisfaction, repeat business, word-of-mouth recommendation, increased sales.

Nopco Paper Chemicals eliminate many operating difficulties, cut costs, save time, improve the finished sheet. In addition to items listed here, they include soaps, synthetic rosin emulsions, plasticizers and lubricants for use in all phases of manufacture—whether paper, paper board, insulating board, pulping and rag cooking, tissue, or converting. Full information is yours for the asking. Write us today.

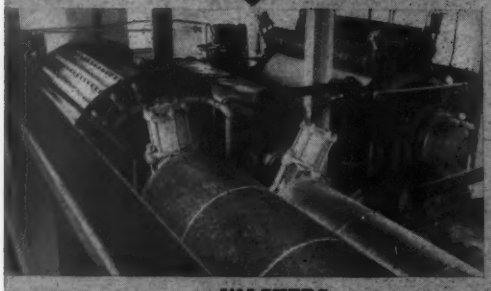
Courtesy of Eastern Corp., Bangor, Me.

DIGESTER

NOPCO Nopalcol*

An additive that helps to reduce cooking time of sulphite pulp.

Pitch Control is initiated here by the addition of a solvent. This solvent aids in keeping liberated pitch in solution so it may be effectively handled later in the system.



WASHERS

Pitch Control

NOPCO 1216-V Used in the Washer, Nopco 1216-V emulsifies the solvent and the pitch in the solvent to reduce the liberated pitch content of sulphite pulp.

Foam Control

NOPCO KF (for Sulphite) With its unique ability to destroy foam, Nopco KF increases the operating efficiency of pulp screening and pulp refining equipment.

NOPCO 1333-B (for Kraft) Here is a highly concentrated product that eliminates foam and promotes efficiency in the production of sulphate pulp.

OTHER EFFICIENT NOPCO DEFOAMERS for use in pulping and bleaching operations are: NOPCO KFH, NOPCO KFS, NOPCO 1519, NOPCO Vegifat Y.

BEATER

Sizing

NOPCO 2251-X, NOPCO 2251-B These anhydrous wax size bases are prepared for easy handling in the mill. Nopco 2251-X requires the addition of water only; Nopco 2251-B, the addition of wax and water. Both yield emulsions stable from infinite dilutions up to 70% solids.

NOPCO 2252 — Paraffin Wax Size An efficient sizing agent, giving a consistently uniform size unaffected by water conditions, pumping action or operating temperature. Equally effective in all types of furnishes. Stable in any dilution. Ideal for mills with small requirements or limited mixing facilities.

NOPCO 2146-R A high free rosin size emulsion, particularly valuable in hard water areas.

NOPCO Size I An efficient waterproofing agent for asbestos paper—and photographic printing papers, where chemical stability of sizing agent is essential.

Softening

NOPCO Softener #73 Specifically formulated for use in manufacture of high grade tissue and towelling. Stabilizes the absorbency of the finished sheet and gives unusual softness. The affinity which this cationic softener has for the fibers, permits its addition at the beater or at any convenient point in the stock preparation cycle.

NOPCO ® EVOLVED THRU RESEARCH

NOPCO CHEMICAL

Formerly National Oil Product

oes the talking

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"WET" END OF PAPER MACHINE

Sheet Formation

NOPCO KF Improves sheet formation, even at increased machine speeds, by eliminating foam and faulty fiber dispersion; dissipates entrained air. Outstanding advantages: at least 75% reduction of thin spots, reduced breaks; improved surface characteristics.

Clean Up

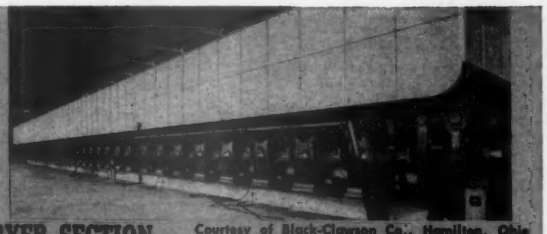
NOPCO 1216-V This emulsifier, when used with a solvent, removes asphalt and pitch deposits from metallic surfaces. An excellent medium for cleaning screens, wire and suction rolls.

Courtesy of Whippany Paperboard Co., Whippany, N. J.

PRESSES

Felt Washing

NOPCO Syntergent*K A felt washing compound that may be used on or off the machine. Mixes readily with warm or cold water; gives a rich, persistent lather. Dispersible and stable in dilute acid or alkaline mediums. Rinses out freely when washing is complete; leaves felt soft and well napped.



Courtesy of Black-Clawson Co., Hamilton, Ohio

DRYER SECTION

Machine Coating

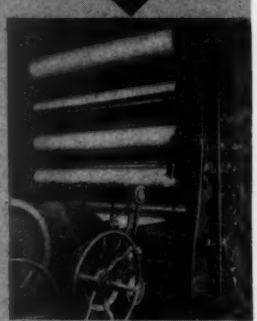
NOPCO ESI Improves flow characteristics as well as brightness and gloss. May be used in casein or starch coatings.

NOPCO 1400-B (Ammonium Stearate) Functions as a plasticizer, and aids in controlling dusting on the calender rolls.

MACHINE CALENDER STACK

NOPCO 2252 — Paraffin Wax Size Besides being used in the Beater, Nopco 2252 may be used as top or surface size in the Size Press or Calender Water Box. Often employed with starch, glue or casein emulsions. Improves printing qualities and increases scuff resistance of paper board.

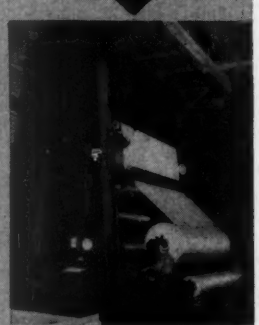
NOPCO ESI Used in conjunction with starch to improve gloss ink printing on folding box board.



CONVENTIONAL COATING

NOPCO 1400-B (Ammonium Stearate) Added to coating color formulations, Nopco 1400-B plasticizes the coating; helps to minimize dusting during supercalendering.

NOPCO 1600-B May be used advantageously for all general defoaming and evening requirements. Minimizes fish eyes and similar defects. Works well with colored coatings...



NOPCO Sulfonated Oils and Fats Incorporated into the coating mix, these materials impart plasticity, reduce foam, promote evenness of application.

NOPCO ESI Flow, brushing characteristics, brightness and gloss of casein and starch coatings are all improved by addition of Nopco ESI. Dusting troubles usually developing on the Super Calender are substantially reduced when Nopco ESI is added to coating color formulations.

NOPCO 1810-L — Wax Emulsion An acid stable wax size used to impart plasticity to coating color mixes.

*Reg. U. S. Pat. Off.

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Personals

MIDDLE WEST

MILAN BOEX (left), who has been elected President and General Manager of Northern Paper Mills, Green Bay, Wis. He has been Executive Vice President and Gen. Mgr. since the death last year of Ag Hanson, former President.

R. W. POLLEYS (right), widely known in Middle West mills especially, who has been Consulting Engineer in Cleveland, O., for three years, joined sales staff of Downingtown Mfg. Co. He has been with the old Bryant mill in Kalamazoo, Kimberly-Clark, Mead and Fort Wayne, Ind., mills.

ROY J. SUND, vice president in charge of manufacturing, Marathon Corp., with headquarters at Menasha, Wis., has been elected president of the Neenah, Wis., board of education. He has served nine years as member of the board in Neenah, where he has his residence.

WALTER PAUL PAEPCKE, chairman of Container Corp. of America, and *ERNST MAHLER,* vice president of Kimberly-Clark, were active in the famed Goethe Convocation which took place at Aspen, Colorado, late in June and early July. Mr. Paepcke headed up the organizing of the financing of the international cultural gathering, and Mr. Mahler was among the officers and financial supporters.

J. T. DOERFLER, Kimberly, Wis., mill manager for Kimberly-Clark, gave 22 certificates out at the Kimberly-Atlas Management Club for completion of the National Assn. of Foremen's Code of Ethics course. *ERNST MAHLER,* executive v.p., spoke on business trends and *JOHN SKIPPER* of the Coosa River, Alabama, newsprint plant being built by K-C, was guest.

A. D. WILKINSON has been appointed production manager of the Kimberly, Wis., mill of Kimberly-Clark Corp. He lives in Appleton.

VINCENT V. LINDGREN and *B. R. PUTNAM, JR.,* have joined the New Product Development Department of the American Cyanamid Co. Dr. Lindgren, who has been in the company's Stamford Research Laboratories, will devote his time to product development. Mr. Putnam, who has been in engineering in the company's technical department, will be concerned with market research.

Kimberly-Clark Picnic

Children of Kimberly-Clark Corp. employes were participants in an amateur show featuring the K-C picnic at Lakeview park, adjoining the Lakeview mill, Neenah, Wis. E. V. Johnson, director of safety, introduced speakers and Robert Lloyd was master of ceremonies.

CHARLES E. MUELLER, assistant manager of the Pulp Department of Elof Hansson, Inc., New York, is now representing the organization in the mid-West. Having spent more than 10 years there, Mr. Mueller is glad to return to the mid-West; will make headquarters in Kalamazoo, Mich., at 1216 Hol-Hi Drive. The company was represented in Illinois, Indiana, and Michigan by Alexander W. Macvie, now retired. In addition to those states Mr. Mueller's territory will include Ohio, Wisconsin, and Minnesota.

E. P. SCHOENTHALER has been appointed a member of the executive staff of the Central Waxed Paper Co., Chicago, it is announced by Harlan K. Snyder, president. Mr. Schoenthaler recently resigned from the H. P. Smith Paper Co. after 10 years of service in the capacity of director, vice president and sales manager.

CARL E. STAKY has completed 25 years of service with the D. J. Murray Manufacturing Co., Wausau, Wis., as general manager since 1929 and as executive vice president since 1942.

EDWARD A. JOHNSTON has geen appointed comptroller for Minnesota and Ontario Paper Co., it is announced by Donald D. Davis, president. Assistant comptroller since 1945, Mr. Johnston succeeds Mr. F. J. Hickling, who has resigned. Mr. Johnston joined M & O in 1933 as office manager for the International Falls, Minn., Division, and later was successively Minneapolis office manager, chief accountant and assistant comptroller.

Kimberly Machine Tender Patents Reel Change Scheme

John Weyenberg, a machine tender at the Kimberly, Wis., mill of Kimberly-Clark Corp., rigged up a method for changing reels on a paper machine a few years back and now has the invention patented, according to the Kimberly-Clark magazine "Cooperation." For some time it has been installed and working out satisfactorily on machines at Kimberly.

Mr. Weyenberg's rig is inexpensive to construct as all it requires is a narrow strip of discarded dryer felt, two posts, one erected on each side of the paper machine winder, and a few clothes pins. The invention is a simple, split-second method of transferring finished paper from a full reel to an empty reel while the machine is moving along at a rapid speed. It saves 400 feet of paper stock and 30 seconds of working time at each reel change. He worked out the idea at home on the washing machine clothes ringer.

VanNort of Reliance Reports on Europe

Back from a five weeks trip to England, Sweden, Finland, France and the Low Countries, J. L. VanNort, application engineer for The Reliance Electric & Engineering Co., Cleveland, well known in pulp and paper field, reports that rehabilitation and modernizaton of European paper mills is proceeding most rapidly where American machines, equipped with engineered drives and built-in precision electrical controls, are making possible higher operating speeds than manufacturers abroad have previously had available to them.

He was in Kauttua, Finland, for start-up of the first Reliance-driven super calender installed since the war in the plant of A. Ahlstrom Co., leading Finnish paper mill.

J. R. KIMBERLY, vice president in charge of sales, Kimberly-Clark Corp., who was assistant director general of the WPB during the war, has been elected to the board of trustees of Lawrence College in Appleton, Wis. *JOHN N. BERGSTROM,* president of Bergstrom Paper Co., retired from the board after 17 years' service.

H. KIRKE BECKER, president of the Packaging Machinery Mfgrs. Institute, and president of Peters Machinery Co., Chicago, passed away from a heart attack, on June 21, on the S.S. Mauretania, shortly before arriving in England.

MAX E. WATSON has been appointed sales promotion manager of Paramount Paper Products Co., Omaha, Neb. This is a newly created position for this specialty printing concern.

CHARLES C. JOHNSON has recently gone to St. Louis as sales representative for the Rhinelander Paper Co. He is the son of F. W. ("Stub") Johnson, operating manager at Rhinelander. Another addition to sales is H. A. Hayward, who has moved to Cleveland from the Rhinelander home office.

Baldwin Representative

R. Nevin Watt, vice president in charge of sales, Eddystone Division of The Baldwin Locomotive Works, has announced the appointment of John J. Littley as sales engineer for hydraulic presses and power tools, assigned to the Chicago District Office of Baldwin. Mr. Littley graduated from the Towne Scientific School of the University of Pennsylvania in 1943.

GOULD STORAGE BATTERY CORP., Trenton, N. J., announces a new line of motive power, diesel-starting, and railroad air conditioning and car lighting batteries, known as the "Z"-plate line. All models of the "Kathanode" and "Thirty" types will include the new grid, bringing the advantages of improved electrical characteristics to users of industrial storage batteries.

A RECORD AT PORT ANGELES

Hydraulic Barking of Big Log Slabs

A new day's record production for its 28 years' of operation; improvement on the paper machines and in the groundwood plants and a new type of hydraulic log barker are among the notable developments of recent date at the big newsprint mill of Crown Zellerbach Corp. at Port Angeles, Wash.

Six and one-half days a week this mill still continues to run on newsprint, providing stable employment for 550 residents of the Port Angeles area, the famed gateway to the Olympic National Park and lying across the Strait of Juan de Fuca from Victoria, B. C.

Malcolm Otis is resident manager at Port Angeles, a position he has held for two years after previously holding a similar post at Lebanon, Ore. Under him, Tom Hargreaves, the assistant manager; Claud P. Kelley, who became paper mill superintendent this year after 22 years making newsprint at the Ocean Falls, B. C., mill, and Leslie E. Warwick, plant engineer, had important roles in the developments discussed here.

E. H. Vicary and Wilbur Lowndes of Central Engineering, and Frank Swift, who did pioneering work on hydraulic barking, were other C-Z engineers actively identified.

There are three newsprint machines at Port Angeles. One is a 234-inch machine and the other two are 164 inches. A record production of 441.73 tons was reached on May 24, a red letter day for this mill. This was the result partly of gradually improved operation and the "know-how" of the crews. Comparatively few changes were made recently on these machines, but one important one was the addition of second suction presses manufactured by Beloit Iron Works.

Transformation of a Barker

Most recent important engineering development at this mill is the construction of a novel hydraulic barker for large slabs or cants in which an existing Stetson-Ross knife barker was used as the basic piece of equipment. The planer head of the knife barker was removed and a hydraulic nozzle made partly by Electric Steel Foundry Co. and partly by Stetson-Ross was substituted.

Esco furnished stainless steel parts which include a swing pipe for the overhead nozzle and some nozzle parts and supply parts. The entire job was designed and carried out by Stetson-Ross Machine Co., under supervision of Frank Swift, Crown Zellerbach Corp. engineer, who has done much experimental work in hydraulic barking in recent years, at Crown's former Cathlamet, Wash., sawmill and at the Camas, Wash., paper mill.

This, of course, is a very simple type of hydraulic barker and demonstrates what can be done with existing equipment. Log cants up to 20 feet long—log quarters or outside cants, can be sent through the machine on toothed conveyor rolls. An oscillating nozzle is overhead, with 1200 p.s.i. water pressure at nozzle mouth.

A 500 g.p.m., 3,550 r.p.m. pump made by Byron Jackson of Los Angeles, serves it and the pump is driven by a 450 hp. 3,550 r.p.m. induction motor made by Elliott Co. of Ridgeway, Pa.

The present capacity of the barker is 8,000 feet an hour, but it is expected that with further experience this will be improved.

All of this hydraulically barked wood goes to the sulfite mill which has capacity of 75 tons a day. Because the wood is quartered and slabbed, the inside knots and dirt can be cleaned and it is of quality suitable for that purpose. Considerable saving in wood is achieved by the hydraulic method, and it may be up to 15-18%.

In the groundwood operations at Port Angeles, a notable improvement has been the installation of a new Drew Engineering Co. (Portland, Ore.) system for carrying off steam and vapor.

Another innovation at Port Angeles is a new type of two-speed log haul, introduced because of the utilization now of small diameter logs as well as large logs.

It has speeds up to 200 ft. a minute. The log haul chain of cast manganese and chairs of carbon steel were supplied by Electric Steel Foundry Co. The log haul is driven by a 100-hp. General Electric Motor with Western Gear Works reducer.

EXPERIMENTAL TOWER

POWELL RIVER CO.'S experimental heat recovery tower.

A new tower on the roof of No. 5 and 6 machine room, Powell River Co., at Powell River, B. C., is expected to save between $50,000 and $100,000 a year, according to Sid Collicutt, superintendent of technical services for the company.

The tower's purpose is maintenance of a constant head box temperature the year round. It is part of a new heat recovery system devised by the company's technical staff designed to recover waste steam in newsprint production.

The tower measures 50 feet in height and is 12 feet in diameter. Fresh water carried to the top of the tower is distributed inside the tower by sprayers. The spray absorbs the heat from the paper machine dryer hood exhaust air and the temperature of the water is raised from 40 to 95 degrees.

This hot water is used for the dilution of groundwood wash stock and at the paper machines' wet end showers in place of the customary method of fresh cold water. The result is a dryer sheet of paper passing through the dryer section, thus reducing steam and fuel consumption.

At present only one tower is in operation and mainly on an experimental basis. To complete the heat recovery system two towers are contemplated on the roofs of the two new machine rooms for each machine, with the exception of the recently installed No. 8, which has its own recovery system.

Powell River Sets Newsprint Record

Powell River Co. set a new production mark June 28 when it produced 1,012.3 tons of newsprint in a 24-hour shift. In setting this record two machines, No. 5 and the newly installed No. 8, set individual high marks. No. 8 produced 200.7 tons during the period.

A $10 bonus was paid by the company to all regular employes.

Still Breaking Records

North American newsprint mills made 6.9% or 196,000 tons more newsprint in the first six months of 1949 than in 1948 and more than in any other half-year in history.

Production increased 7.1% in the U. S., 5.4% in Canada (mainland) and 24.2% in Newfoundland, according to the Newsprint Service Bureau, New York.

In the month of June—last of the six—they made more, and shipped more, newsprint than in any other June in history. A total of 513,359 tons were produced and 522,320 tons shipped (June 1948: 490,290 produced; 498,474 shipped).

TREATING BOILER FEEDWATER

By Lee F. Chaney

District Engineer, State of Washington, The Flox Company

In the pulp and paper industry, as in most other industries, the cost of heat energy is becoming more and more a cause for engineering concern in the design of steam generating equipment. This cost increase is forcing boiler pressures into the 600, 900, 1500-pound, and even higher, pressure ranges, in order that the available energy of the fuel may be more fully utilized. This condition has existed in the east and is becoming critical here in the Pacific Northwest because of the shortage of wood fuels, the comparative absence of coal, and the increasing cost of fuel oil.

In these higher pressure plants, proper water conditioning becomes a "must," and infinitely more care must be given to the proper selection of pretreating equipment and the supervision and control of the entire water treating program than is normally given to lower pressure work.

Proper conditioning of water for high pressure work must meet the following objectives:

1. Feed water must be essentially free of scale and sludge forming materials, such as calcium and magnesium. The small residual traces of these materials must be treated in the boiler to render them as nearly non-deposit forming as possible. A small amount of deposit on the heating surface of a high pressure unit may cause serious damage.

2. In order to produce the desired quality of steam, the boiler water must be very low in suspended matter, sludge, and silica, and be reasonably low in alkalinity and dissolved solids. In some cases it is necessary to preclude foaming by treatment of boiler water with proper antifoam chemicals.

3. Oxygen and carbon dioxide must be eliminated from the feed water to protect the entire system from corrosion, and also prevent any products of corrosion from returning to the boiler and being a source of iron oxide scale, which may cause serious trouble.

Proper selection from among the following types of pretreating equipment will aid in accomplishing these objectives:

1. Hot process lime and soda, with or without silica removal and with or without secondary phosphate softening.
2. Hot process primary phosphate softening with or without silica removal.
3. Ion exchangers followed by deaeration.
   a. Sodium exchangers
   b. Acid exchangers
   c. Caustic exchangers.
   d. Silica exchangers.
4. Evaporators followed by deaeration.

The choice of the above equipment will depend upon the following items:

1. Boiler design and pressure.
2. Type of raw water.

LEE F. CHANEY, Rural Route, Puyallup, Wash., who presented this paper at Engineering Meeting of Pacific Coast TAPPI at Bellingham, Wash., in September, 1948. He is district engineer in Washington State for The Flox Co.

3. Percentage of raw water make-up.
4. The purpose for which the steam will be used.
5. Availability desired from steam generating equipment.
6. The particular plant design and heat balance available or desired.

Not enough can be said on the care and study given the selection of the proper type of pretreating equipment for a particular application. Every piece of equipment is capable of doing a highly specialized function, but the wrong equipment cannot do the right job.

It is seldom possible to operate with preconditioning equipment without some form of after-treatment consisting of chemical application, supervision and control. Some of the factors which need to be considered are:

Feed Line, High Pressure Heater, and Economizer Deposits

Generally speaking, waters from lime and soda softeners, primary or secondary, phosphate softeners, and many raw waters are unstable in feed water lines, high pressure heaters, and economizers. The reasons for this are numerous and the methods of correction are varied and sometimes difficult; however, remarkable progress has been made with the use of organic stabilizers in inhibiting deposits in these areas.

Feed Line and Economizer Corrosion

Proper mechanical deaeration along with a continuous feed of an oxygen scavenging reagent plus pH correction of the feed water are accepted practices. Film protecting chemicals fed continuously into the feed water are also widely used.

Sludge Conditioning

In low pressure boiler work many types of organic materials have been used successfully in conditioning sludges to render them non-adherent to heating surfaces. For use in high pressure work, because of the temperatures encountered, special processing has been necessary. A high temperature resistant liignin derivative has been developed which has been very successful in conditioning sludges in high pressure boilers, and also in the control of iron oxide deposits.

The problem of producing steam essentially free from boiler water solids involves the following factors:

1. Proper design and installation of steam baffles and steam purifiers in the boilers.
2. Control of the type and concentration of the boiler water solids.
3. Water level and boiler ratings.

There has been a recent development in the use of polyamides in preclusion of foaming of boiler water. With these materials it has been possible to operate boilers with no carry over with very much higher total dissolved solids and suspended matter than was formerly thought possible.

Even in the absence of mechanical carry over, silica can be volatilized into the steam and condense as a deposit on turbine blades, etc. Factors influencing this seem to be boiler water temperature and the concentration of silica and alkalinity in the boiler water.

Condensate and Dryer Corrosion

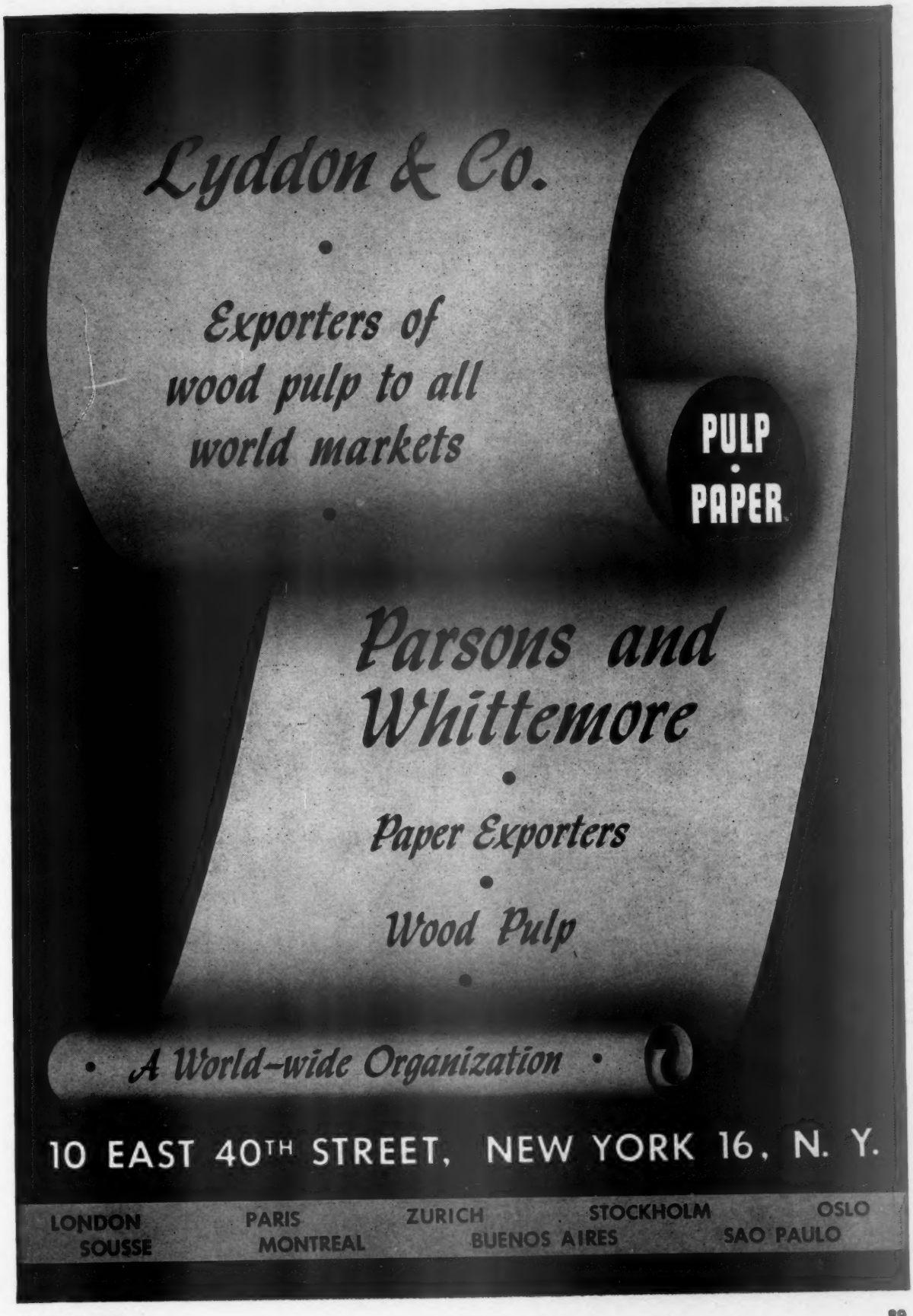
In addition to the elimination of oxygen and carbon dioxide in the feedwater, much can be done in the pretreating to control corrosion in the steam condensate. The reduction or elimination in the feedwater of bicarbonates and carbonates is helpful, because these decompose in the boiler water and liberate carbon dioxide into the steam and contribute to the corrosive tendency of the condensate. Corrosion can also be reduced by neutralizing the carbon dioxide of the steam with volatile amines, and by the use of film protecting chemicals injected into the steam.

Caustic Embrittlement

It is generally accepted that there are means of having a boiler water tested to determine its embrittlement characteristics and accepted means of chemical treatment to prevent boiler plate embrittlement.

Conclusion

The importance of a complete treatment program can be seen from the fact that a feed pump, feed line, steam line, or turbine failure is every bit as damaging to production as is a boiler tube failure. While this discussion has referred especially to work with high pressure boiler water, much of the discussion can be applied very profitably to low pressure plants. Any improvement in water treatment and control will usually result in lower steam costs, lower maintenance costs, and higher availability of steam equipment; and is, almost without exception, worth its investment cost.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Personals

CANADA

Robin Bell Irving Dies

Robin Bell-Irving, 55, former vice president of Powell River Co. and one of its chief executives for more than a quarter century, died at his home in West Vancouver, B. C., July 3 after a long illness.

Member of a well known British Columbia family, Mr. Bell-Irving joined Powell River soon after completing his university training as an engineer. He was resident engineer and resident manager at Powell River.

COL. C. H. L. JONES, president of the Mersey Paper Co., Ltd., who had resigned as president of Price Bros., Ltd., died recently at his home in Quebec City.

ELLIOTT M. LITTLE, president of Anglo-Canadian Pulp & Paper Mills, Quebec, has been elected a director of Bathurst Power & Paper Co.

H. R. MacMILLAN, president of Nanaimo Sulfate Pulp Ltd., whose mill near Nanaimo, B. C., is now under contsruction, returned recently from the United Kingdom.

ROY ECCLESTONE has joined the board of Rolland Paper Co., with *MARC ROLLAND,* according to announcement by *J. PIERRE ROLLAND,* president of the organization.

TOM COLLINS, formerly mechanical superintendent of Bloedel, Stewart & Welch, Ltd., Port Alberni, B. C., has joined the Nanaimo Sulphate Pulp, Ltd., organization.

PAUL E. ROBERTS has been appointed manager of new developments for Abitibi Power & Paper Co., and will be responsible for developing and bringing into production new products. A graduate of Lehigh University, he was formerly with U. S. Gypsum.

J. A. McARTHUR, project engineer for Stadler, Hurter & Co., Montreal engineers, has been in Karachi, Pakistan, conferring with government authorities planning a 30,000-ton pulp mill. *E. TROST,* mechanical engineer of the same firm, has been visiting Dutch and Finnish mills where Canadian machinery may be installed. *G. PETERSON,* secretary, has been surveying possibilities of utilizing eucalyptus in the manufacture of dissolving pulp.

J. G. D'AOUST, formerly plant engineer for Sorg Pulp Co., at Port Mellon, B. C., has joined Powell River Co.

M. W. DAVIS, vice-president, Sherbrooke Machineries, Ltd., Montreal, contacted many of his friends in the industry on the west coast when he visited British Columbia in June.

S. B. ROBERTS, Chief Engineer, Celanese Corp. of America, New York, now in full charge of plans for Celanese pulp mill at Prince Rupert, B. C. See article, next column.

PERCY WHITE, Brompton Pulp & Paper Co., Red Rock, Ont., has been elected chairman of the Midwest branch of the Canadian Pulp and Paper Association. *G. A. McCRACKEN* of Provincial Paper Co., Port Arthur, is vice-chairman, and *F. I. ANDERSON,* Thunder Bay division of Abitibi, secretary-treasurer. The group represents the mills around the Lakehead and the north shore of Lake Superior.

F. D. MULHOLLAND, chief forester for the Canadian Western Timber Co., who returned from Sweden recently, brought some European spruce and pine seed to plant in the government forest nursery at Quinsam, Vancouver Island. Canadian Western, planting 1,000,000 trees of native species this year, is planning a 300-ton dissolving pulp mill for Duncan Bay.

J. H. AINSWORTH, formerly technical supervisor, Bloedel, Stewart & Welch, Ltd., at Port Alberni, has joined Mobile Pulp & Paper Co., Mobile, Ala.

LEW CORCORAN, general superintendent, Anglo-Canadian Pulp and Paper Mills, Ltd., announces appointment of *CAL LAVERTY* as electrical superintendent, succeeding *KEN McCONOMY,* recently named mill manager of Gaspesia Sulfite Co., at Chandler, Que.

K. S. CRAWFORD of Union Screen Plate Co of Canada, Montreal, recently made a cross-Canada trip to pulp and paper mills.

Sir Eric Bowater Protests Government's Pulp Profits

Sir Eric Bowater, chairman of Bowater Paper Corp. and head of Bowater's Newfoundland Pulp and Paper Mills, Ltd., has accused the British government of taking "a very substantial profit" on bulk buying of paper pulp while keeping prices high and production low.

The British Board of Trade has reduced the price of newsprint and told British newsprint manufacturers they now may expand production to 55% of pre-war capacity instead of 50%. Sir Eric said he believed the permitted operations of British mills "could and should have been increased far beyond the 55% now authorized."

Sir Eric added that the price of newsprint to newspapers could and should have been reduced substantially below $144.75 a ton.

He said mechanical pulp delivered to British ports from Scandinavia now costs $67.50 a long ton. The government sells it to mills for $86 a ton. Sulfite pulp is bought by the government for $102 per long ton and sold for $106.

PAUL E. COOPER, president, Pacific Mills, Ltd., Vancouver, B. C., presented to *CHARLES WILLIAM GARRARD,* University of British Columbia forestry graduate, the $1,000 graduate fellowship given by the western branch, Canadian Pulp and Paper Association. Mr. Garrard will do his graduate work at New York State College of Forestry, Syracuse. Mr. Cooper is chairman of the western branch CPPA.

C. J. JEFFREYS, formerly with Stadler, Hurter & Co., and at one time with Powell River Co., Fraser Companies and Ontario Paper Co., has established a private practice as consulting engineer in Montreal

CLIFF NAYLOR, Price Brothers, Ltd., Quebec, was in New York City recently to attend, among other business, one of the weekly meetings of the Salesmen's Association.

DR. JAMES E. FOOTE, formerly assistant general manager of the B-F-D division, Diamond Match Co., Plattsburg, N. Y., has been named manager of manufacturing for the E. B. Eddy Co. mills at Ottawa and Hull, Que.

Sorg Company Announces Indefinite Pulp Closing

Operation of Sorg Pulp Co. at Port Mellon, B. C., is shutting down for an indefinite period. The announcement was made by President John A. Aull, Jr., of Middletown, O. The Vancouver, B. C., offices will also be closed.

Port Mellon has seen several mills come and go, the original one being built in 1908. Leadbetter interests of Portland operated the mill until 1941, when Sorg Paper Co. acquired it. A modernization program was recently completed, so it is presumed operations will be resumed when conditions become favorable.

Construction at Prince Rupert On Pulp Mill Is Proceeding

Construction of Columbia Cellulose Co.'s new mill at Port Edward, B. C., for the production of dissolving pulp is making good progress, according to President Harold Blancke, who also heads the parent company, Celanese Corp. of America.

Six hundred men are now at work on construction near Prince Rupert. Footings and foundation walls have been poured for the office, pulp storage, machine shop and pulp finishing buildings.

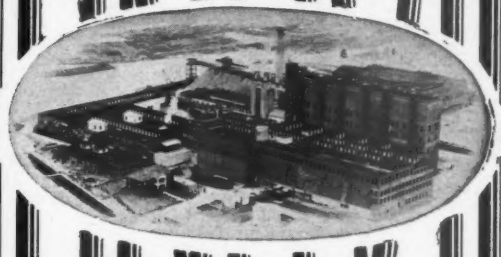
So-called "sandwich walls" consisting of a layer of Foamglas insulation ingeniously held between two layers of concrete made in panel form will be used in certain departments of the pulp mill.

Less than half as thick as conventional masonary wall, the novel assembly overcomes operating problems where high humidity is a factor and requires a minimum of maintenance.

The company has leased a lime rock quarry on nearby Smith Island to provide lime for the mill.

Only a small quantity of logs will be cut this year; a heavier cut is planned for 1950 to provide for start of operations. Full log production is scheduled for 1951.

SOUNDVIEW



High Grade

BLEACHED SULPHITE PULP

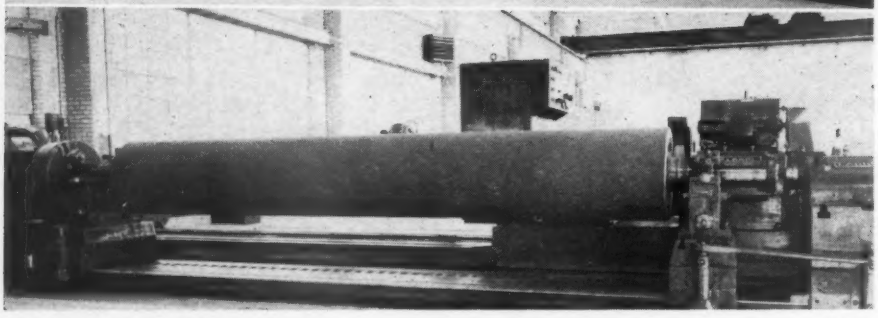
YES! GO WEST!
1949 Fall Meeting TAPPI
Portland, Oregon

SOUNDVIEW PULP COMPANY

EVERETT WASHINGTON

FAITH IN INDUSTRY GROWTH

Shown in Stowe-Woodward Expansion



SALES ENGINEERS OF STOWE-WOODWARD, Inc. are shown at top (left to right): Roy W. Holden, veteran representative in Lake States, with home and office in Kalamazoo, Mich.; Clarence Morganstern of Upper Newton Falls, N. Y., home office; Edward S. Greene, New York; Asa F. Fisk, home office; Charles M. Schermerhorn (in back), of Philadelphia; John H. Glander, New York; Oliver P. Arnold, Buffalo, a veteran in rubber roll field; Bradford West, Pittsfield, Mass.; Howard H. Jonsenius, home office; Roger P. Arnold, Buffalo (in back); Fletcher P. Thornton, Jr., New York; William A. Honey, Kalamazoo; John D. Retallik, Pittsfield; Fletcher P. Thornton of New York, who is one of the pioneer salesmen and Roy Towksbury, home office. Chairman of the Board W. E. Greene of New York was not present when picture was taken. Below the group is the new Ward Plant addition to Stowe-Woodward properties at Upper Newton Falls. Lower view is of one of important new tools installed—the new 42¼ ft. Farrel rubber roll grinder, longest and largest of its type in the U. S.

Indicating the confidence of this company in the steady growth of the paper industry, the new Ward Plant of Stowe-Woodward, Inc., was dedicated recently at Upper Newton Falls, Mass., before a large group of visitors and municipal officials. It was named for a former S-W president.

In company with E. W. Peterson, president, and the Hon. Theodore R. Lockwood, mayor of Newton, guests were shown through the old Adams plant and the new Ward plant prior to the dedication ceremonies. Then Mr. Peterson and Mayor Lockwood told the assemblage how the history of Stowe-Woodward has been interwoven with the community for more than 50 years. "We have remained small because we believe we can make our chosen products better, and sell them better, as a small company," Mr. Peterson said. "But today we have more employes than at any time in our history. And we stay with our guiding principal: to make fine quality products."

Mayor Lockwood vouched for the record of the firm, telling how it grew from the Newton Rubber Co. and the old Brockton Rubber Works—and of the 25 years of planning that went into the new Ward addition.

The latter was put into operation when Mr. Peterson directed operators of the 20-ton overhead crane to pick up "Roll OOxOO" and carry it to its first operation point on the newly installed production line. Its eventual destination was to be the Covington, West, Va., mill of West Virginia Pulp and Paper Co. After the ceremony the hosts and guests drove to Brae Burn Country Club for luncheon. Among the notables at Newton for the celebration was W. E. Greene, widely known in the industry, who is chairman of the board and director.

The new Ward plant is a completely integrated factory for the manufacture of rubber rolls, and the management is particularly proud of the speed with which it was constructed. Modern and functional in style, the new building cost in the neighborhood of $500,000. Production line equipment includes Farrel - Birmingham grinder, mixing and warm-up mills, calender, lathes, vulcanizers, incubator, and complete auxiliary equipment for roll manufacture. Supported by the Adams plant, the new facilities give Stowe-Woodward an unusual position in the roll industry, according to observers in the industry.

The Stonite roll and Tannite couch roll are S-W developments. Also, the Featherlite, lightweight lumpbreaker roll used over suction couch on many high speed machines. The size press roll was one of S-W specialties.

Al Nyitray At Conventions On East and West Coasts

All the way from Victoria, B. C., to Atlantic City, N. J., in just a month is almost something of a record for traveling to attend industry conventions, but things like that are done quite frequently in the pulp and paper field. Albert A. Nyitray (right), sales manager of Eastwood-Nealley Corp., Belleville 9, N.J., is the latest one to do it.

After visiting most of the Pacific Northwest mills with John Fulton and Ed Tidland of Pacific Coast Supply Co., Portland, Ore., western agents for Eastwood-Nealley for several years, and attending the Victoria meeting, reported last month in these pages, Mr. Nyitray flew east in order to make the Superintendents convention at Atlantic City.

For Sale:

Will Sacrifice:

1—9" x 12" American Ball Horizontal Twin Slow Speed Automatic Steam Engine with two 3" Pickering Governors, Speed Regulating Changer. Automatic Lubrication. 150 Horse Power.

1—96" Murray Chipper, roller bearing, complete with 150 HP, 200 RPM, direct connected synchronous motor, automatic full voltage, starting panel and MG set. Three sets knives.

All above equipment may be observed in operation and is in good operating condition.

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A HIGHLY PURIFIED AMYLOLYTIC ENZYME

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WALLERSTEIN COMPANY, INC. • 180 MADISON AVENUE • NEW YORK 16, N. Y.

Personals

PACIFIC COAST

H. D. NICKLE (left), has just been appointed Manager of the new district office for the states of Washington and Oregon of Combustion Engineering—Superheater, Inc. The office opened in July is in the Skinner Building, Seattle. Mr. Nickle, a mechanical engineering graduate, joined Combustion of Canada in 1937, as Manager of Service and Erection in Montreal. Later he was in contract work and sales in pulp and paper industry. In 1945 he was transferred to the New York office of Combustion Engineering—Superheater, Inc., in charge of Paper Mill Div. sales and his personal move to the Far West indicates the great importance his company attaches to future Pacific Coast developments in pulp and paper.

CHARLES W. CASSELL (right), who was recently appointed Superintendent of Power and Maintenance of Everett Pulp & Paper Co., Lowell, Wash., to relieve Charles B. Niel, who has retired after 12 years service. Mr. Cassell was formerly with John Strange Paper Co., Barrett Div. of Allied Chemical & Dye Corp., Bryant Paper Co., West Virginia Pulp & Paper Co., and Congoleum-Nairn Inc. He is a registered professional engineer in Michigan and Wisconsin in mechanical and chemical engineering and attended Purdue and the Institute of Paper Chemistry.

LEO F. McCLOSKEY, who is office manager of the Soleduck Logging Division, Port Angeles, Wash., for Fibreboard Products Inc., also is acting office manager of the Fibreboard pulp and board mill at Port Angeles in the absence of *H. V. (JACK) MORRIS*, who has been seriously ill. Mr. McCloskey, native of Hoquiam, Wash., is a graduate forester from the U. of Washington and started with Fibreboard at the Sumner, Wash., mill. He was a first lieutenant in the army air corps during the war.

CARTER WATSON, chemical engineer with the Puget Sound Pulp and Timber Co., was a recent guest speaker of the Whatcom County Realtors Board meeting in Bellingham, Wash. Mr. Watson reviewed his work with the U.S. Synthetic Rubber Research Bureau in Akron, Ohio, during the World War II, and outlined the development of the new "cold rubber" process, which came under his supervision at the Akron Laboratories.

A FUTURE PURCHASING AGENT has arrived at the home of Mr. and Mrs. Charles McCullough, storeroom keeper for the Puget Sound Pulp and Timber Co. in Bellingham. The little fellow, bearing the name of Charles Randolph, arrived on Mother's Day, was greeted by his four-year-old sister, Beverlee.

BEN F. WARREN (left), newly appointed Converting Mgr. at Crown Zellerbach mill in Camas, where converting operations were greatly extended since the war. Born in Cloverdale, Calif., attended both U. of Calif. and Stanford U., with Crown Z since 1944 and recently as Chief Industrial Engineer in Portland, Ore., for all mills. He was 9 years with Columbia Steel Co. in Portland as Chief Industrial Engineer.

F. FRANK SULLIVAN (right), Assistant to Resident Mgr., Camas, who had been also Acting Converting Mgr. prior to Mr. Warren's appointment. Mr. Sullivan resumes his more general duties as aide to Res. Mgr. Frank Drumb in all mill operations. Mr. Sullivan has been 37 years with the Crown Z organization—in Portland, Ocean Falls and Camas.

Warren to Camas; Helversen Heads Industrial Engineering

Benjamin F. Warren, who headed the International Engineering Department for Crown Zellerbach Corporation in Portland, Ore., has been transferred to the Camas, Wash., mill for duties in the greatly enlarged and improved Converting Division in that operation with title of converting manager.

Frederick D. Helversen, formerly division industrial engineer for the Western Waxed Paper Co., Division of Crown Zellerbach Corp. in Oakland, Calif., succeeds Mr. Warren as head of the Industrial Engineering Department in Portland. Mr. Helversen was responsible for the Industrial Engineering Department at the Western Waxed Paper Co. and in this capacity, among other duties, handled the plans for the expansion program of this company.

Vice President Frank N. Youngman of Portland, confirmed these changes.

HALVAR LUNDBERG, consulting Chemical engineer, of Seattle, who has had his office in the Textile Tower has now moved to 308 Orpheum Building, Seattle. He represents G. D. Jenssen Co., Inc., and American Heat Reclaiming Corp.

W. C. GIGLER, formerly napkin department supervisor in the Camas mill of Crown Zellerbach Corp., has been appointed acting converting superintendent due to the illness of H. W. Duvall, converting superintendent.

VICTOR A. HUGHES, secretary of the Pacific Coast Paper Mills of Washington, has been chosen chairman of the Executive Committee of the Bellingham Chamber of Commerce.

C. W. KELLOGG has been named vice president and general manager of the Northwest Copper Works, Inc., Portland, Ore., replacing W. G. Rovang who recently resigned.

R. A. McDONALD and *HAROLD A. ZELLERBACH*, executive vice-president, San Francisco, and *FRANK YOUNGMAN*, vice-president, Crown Z, Portland, Ore., made a recent trip to Canada which took them to the Ocean Falls mill, also.

FRANK DRUMB, resident manager, Crown Zellerbach Corp., Camas, made a recent flying trip to New York and to Southern mills all the way from the southeast coast to Spring Hill, La.

JACK HANNY, vice president in charge of manufacturing, Crown Z, San Francisco, visited Northwest mills before the 4th of July shutdowns.

DR. VIRON V. JONES, who graduated from the University of Illinois and received his Ph. D. in organic chemistry, has joined the Central Research and Technical Dept. of Crown Zellerbach Corp. at Camas, Wash., as senior research chemist in organic chemistry. His home was in Cedar City, Utah.

MYRON W. BLACK, mill manager of the Inland Empire Paper Co., Spokane, Wash., was a visitor to New York and other eastern points late in June on a business trip. Joined by his 15-year-old son in Flint, Mich., he picked up a new car and returned to the West by motor.

DR. MAURICE KINSEY, chemist at the Rayonier lab at Shelton, Wash., recently relinquished his chairmanship of the Boy Scout movement in that country after more than five years in the Scout organization leadership.

NORMAN LEWTHWAITE, assistant manager, Port Townsend, Wash., mill, was chairman of the charter night party opening a new attractive Kiwanis club in that town and *DON OSBORNE*, assistant personnel supervisor at the mill, is vice president of the new Kiwanian unit.

E. CLINTON ASH, Jr., chemical engineer with Crown Zellerbach's Central Research and Technical Department at Camas, has transferred to the technical staff at Port Townsend, Wash. He previously had been at Port Townsend and was a lieutenant (j.g.) in the Navy during the war.

RAYMOND A. DUPUIS, assistant resident manager, Crown Zellerbach Corp., West Linn, visited paper mills in Quebec and eastern U. S. and some of the big magazine printing plants in the east. *ED NUNN*, technical director at West Linn, making a separate trip, also got to view the big printing plants, particularly in Chicago.

OPPORTUNITY WANTED

Seasoned executive possessing mature balance, keen perspective and inherent tact seeks position where competence, trust, and unusual ability are required. Technical and practical knowledge of paper making, converting and specialty treatments accrued during 20 years' experience in production, research and technical sales. Reply Box P&P-48, Pulp & Paper, 71 Columbia Street, Seattle 4, Wash.

PETER T. SINCLAIR, resident manager, Crown Zellerbach Corp., West Linn, Ore., took his wife and two teen-age daughters on a motoring vacation to Los Angeles, Hollywood and Southern California.

JACK V. SAVAGE, sulfite mill superintendent, Crown Zellerbach Corp., Camas, Wash., attended the 1949 Stanford Business Conference at Palo Alto, Calif., during the last week of July.

WINSTON SCOTT, resident manager, Rayonier Incorporated, Shelton, Wash., with wife and daughter, vacationed at Lake Chelan in the Cascade Mountains and took in the state golf tournament in Wenatchee.

DON REED, alcohol plant superintendent for Puget Sound Pulp, took his family for a cruise through the San Juan Islands and the waters in and around Victoria, as the high point of his summer vacation.

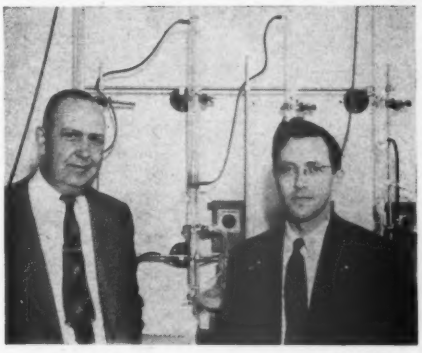
CARL SAHLIN, logging manager for Puget Sound Pulp & Timber Co., is commodore of the Bellingham Yacht Club. *MRS. GUS OKERLUND,* wife of the personnel manager at Puget Pulp, is president of the Women's Auxiliary of the Yacht Club.

JOHN SOMERS, who retired last year as finishing room supervisor at Port Angeles and formerly was at the Camas mill of Crown Z, has opened a new restaurant in Port Angeles—the Cozy Home Cafe. All old peddler friends welcome.

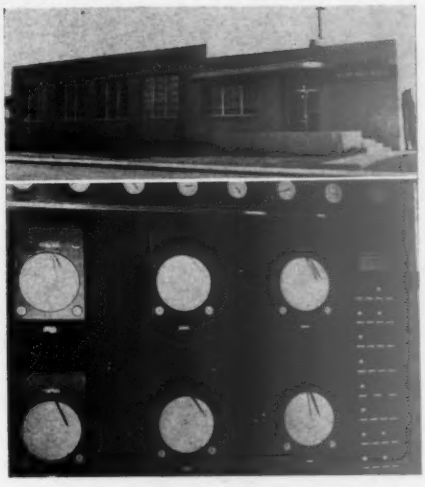
DAN ROBBINS, head draftsman, provided his Lake Whatcom home as the scene of a picnic for over 100 office, supervisory staff and laboratory employes of the Puget Sound Pulp and Timber Co. of Bellingham. Swimming, water skiing and speed boating preceded dinner. *MISS LORRAINE LIMBACHER,* secretary to *ERIK EKHOLM,* general superintendent, and *FRANK BROOKS,* laboratory statistician, were in charge of arrangements.

BOWLERS OF PUGET SOUND Pulp and Timber Co. League concluded their season with a banquet. Homer Irwin of shipping and Thornton Behme were in charge. Walter Groves had the highest average score for the year.

AT SAN LEANDRO, CAL.
New Lab Tests Packaging



G. F. CHASE (left) is Manager, packaging research and development dept., at San Leandro and C. S. FUNK (right), is Chemical Engineer in charge of the lab., Western Waxed Paper Co., division of C-Z.



Top — Exterior of packaging research and development laboratory, Western Waxed Paper Co., division of Crown Zellerbach Corp., San Leandro, Calif.

Lower — Battery of six Brown Instrument Co. temperature and humidity recorders, installed by the Drew Engineering Co., Portland, Ore., at San Leandro.

Selection of the most economical packaging material to meet requirements of any climatic conditions is one function of the new packaging research and development laboratory built by Western Waxed Paper Co. near their new plant at San Leandro, Calif. G. F. Chase, manager of the department, has had a successful career with a number of other paper converters. In charge of the laboratory is C. S. Funk, chemical engineer, who was with Crown Zellerbach Corp.'s Central Research and Technical department at Camas, Wash., for 12 years.

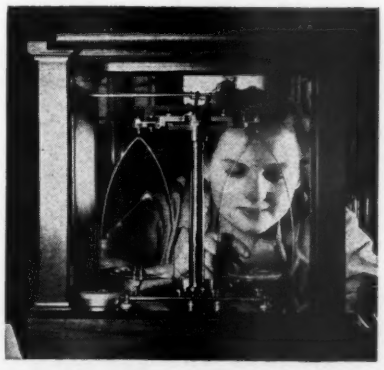
There are six conditioned rooms where packages of food and other goods are actually tried out under various "weather" conditions. There is the room where standard conditions for testing papers prevail — 73° F. temperature, and 50% relative humidity. The Arctic room is 20° F. below zero, with humidity between 50 and 70%. In the Prairie room temperature is 0° F.; humidity, 40%. In the Tropic room the temperature is kept at 100° F.; humidity, 90%, and the Desert room, temperature 100° F., humidity 15%.

Then there is a Variable room where the temperature can be varied from 35 to 80° F., and humidity from 50% to 80%.

Checks are made at regular intervals in all these rooms on various types of packaged foods and other goods. The package is weighed, then after being in the testing room it is checked again for gain or loss of weight. Moisture content is also checked.

Beside testing packages the staff is concerned with working out blends of coatings to be used for certain packaging materials, with the most economy.

The machine room contains three York compressors for providing refrigeration ranging from ¾ hp. to 15 hp. There is a large gas-fired boiler, and a Drew air conditioning system, installed by the Drew Engineering Co., Portland, Ore. This company also provided the control panel with six Brown Instrument Co. temperature and humidity recorders.



One of the Women Behind Eastwood Wires

Muriel Abrash

Operates on a "Small Scale"

On an over-all basis, we operate on a large scale, considering that we make our own alloys, cast our own plates and from them draw our own wires, wind them and weave them.

Even the "smallest" phase of our operations is "big" to us; for example, the step pictured here: that of determining the correct analysis of alloys for every type of warp and shute wire.

Here in the laboratory is the heart of Eastwood's manufacturing philosophy: Proper Alloying + Control + Analysis = Quality in Fourdrinier wires.

EASTWOOD-NEALLEY CORPORATION • Belleville, N. J.

AUSTRALIAN PULP AND PAPER INDUSTRY Technical Association recently selected its interim executive committee for 1949. Here are the members: Back row, left to right—Dr. W. E .Cohen, A. C. Fisher (who toured U.S.-Canada Mills last year); J .L. Brett, Assistant Treasurer; K. S. Bull, Associated Pulp & Paper Mills; J. L. Somerville, Australian Newsprint Mills, Ltd.; D. E. Hale.

Back row—G. W. Ellis, Australian Paper Mfgrs. Ltd.; Miss C. M. Wright, Assistant Secretary; H. B. Somerset Past President; Dr. H. E. Dadswell, President; L. R. Benjamin, Vice President; G. H. Wiltshire, Secretary-Treasurer.

20" and 12" Diameter Monel Piping

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—BETTER MORE WAYS

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GIVE YOU
THE FACTS

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Food Industries Uses Of Paper and Board Packaging

Market conditions will be the major cause of some declines, averaging probably around 5% or less, in the 1949 packs of canned, dried, frozen and glassed foods, all of which use large quantities of fiber cartons or fiber cases or both.

In frozen food production—now more than twice what it was in immediate prewar years—there are no major changes in sight, except for continuing growth of the frozen food concentrates. There was a slight drop in frozen food production in 1948 as compared with 1947 but it still was high at 2,091,000,000 lbs.

Frozen foods had a bad market year in 1946-47, then their year of reconstruction in 1947-48. The market situation now looks sound and should permit production of about the same size in 1949 to meet 1949-50 demands.

In frozen foods, vegetables, eggs and specialties are largely packed in fiber cases and cartons and a considerable percentage of fruits, meats, poultry and fish are also paper packaged. There is increasing interest in this field in paper use.

In 1949, the canned food pack probably will be cut about 5% in over-all production, with the largest slashes in canned fruits and vegetables. The 1949 pack, therefore, will require moderately less quantities of paper labels and fiber shipping cases than in 1948.

However in 1948 there was an increase over 1947, with the pack going up to 563,000,000 cases from 534,000,000. Both years were below the 1946 figure of 630,000,000 cases. Stocks on hand are larger than a year ago and not all of the 1948 pack will be moved out by the time the 1949 season begins.

The dried food pack also will be reduced about 5% in 1949 under 1948 figures, which likewise were slightly off those of 1947. Major cuts are forecast in dried beans, peas. A very large portion of the dried food business is packaged in fiber cases and cartons.

In dried foods, the situation is uncertain because a large part of the production has been taken by the government for overseas shipment in recent years. Whether shipments for European aid will be heavy in 1949 remains to be seen, but they are likely to be smaller.

Glassed foods, whose jars and bottles are always packed in fiber cases, enjoyed a rapid rise during the war period, due both to shortage of tinplate and sound promotional work. The U. S. output, forecast at only 105 million cases in 1944, rose to a phenomenal record high of 289 millions in that year. It has dropped off in recent years in a leveling off process and perhaps there will be about a 3% decline in 1949.

Glassed foods have seen production exceed consumption in 1947, and cut back on production during the year 1948. Although declines should not be large, some items may have to be cut still further in 1949.

WIRE CLOTH
FOR PULP AND PAPER MILLS

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1949 Fall Meeting TAPPI
Portland, Oregon

PHOSPHOR BRONZE...MONEL...STAINLESS STEEL

AVAILABLE IN A BROAD RANGE OF CONSTRUCTIONS
AND ALLOYS FOR CYLINDER FACES, SAVE-ALLS,
DECKERS AND THICKENERS, FILTERS AND WASHERS

Pacific Coast Supply Company
PORTLAND, OREGON - SAN FRANCISCO, CALIFORNIA

GRIFFITH RUBBER MILLS

RUBBER COVERED ROLLS

SUCTION
FELT
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SEAL
MARKING
PRESS
WORM
TABLE

Serving
WESTERN INDUSTRY
Since 1911

Griffith RUBBER MILLS
RUBBER COVERED ROLLS

PRINTING ROLLERS

TANK and PIPE LININGS
MECHANICAL RUBBER GOODS
DYNAMIC ROLL BALANCING
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FLAT SCREEN DIAPHRAMS
SEAL STRAPS
DECKLE STRAPS
DOCTOR BLADES

2439 N. W. 22ND AVENUE PORTLAND 10, OREGON BEacon 7126

Yes! Go West! 1949 Fall Meeting TAPPI, Portland, Oregon

New Mastair Valve

A new 4-way Mastair valve of the balanced spool type, controlled by one 4-way or two 3-way pilot valves, has been announced by Hanna Engineering Works, Chicago.

Design, construction and operation information, specifications and circuit diagrams are included in valve catalog 251, available from Hanna Engineering Works, 1765 Elston Ave., Chicago 22, Ill.

Kehoe in England

While in England R. D. Kehoe, president of Paper and Industrial Appl[illegible] ances, visited mills to investigate the operation of the Rotabelt units.

"LET'S TAKE A LOOK AT YOUR CATERPILLAR DEALER," a twelve-page, two-color booklet, has recently been released by Caterpillar Tractor Co., Peoria, Illinois to highlight the workings of the world-wide distribution organization maintained by the manufacturer. Copies may be secured by writing Caterpillar Tractor Co., Peoria 8, Ill., requesting Form No. 12112.

A NEW BULLETIN covering "Hydrafiners," No. 7-SB, has just been released by Shartle Bros. Machine Co., Middletown, O. These bulletins, which cover refining problems in the paper industry are available upon request to the company.

from birch and aspen *now* come semi-chemical pulps

ABUNDANT and fast growing, these hardwoods are capable of vast increases over standard yields after sodium sulphite treatment followed by SPROUT-WALDRON refining.

Readily bleached and with high initial strengths, such pulps may be substituted for bisulphite in book and comparable grades.

Low power and high increments of clean, uncut fibers, offer inducement to serious consideration.

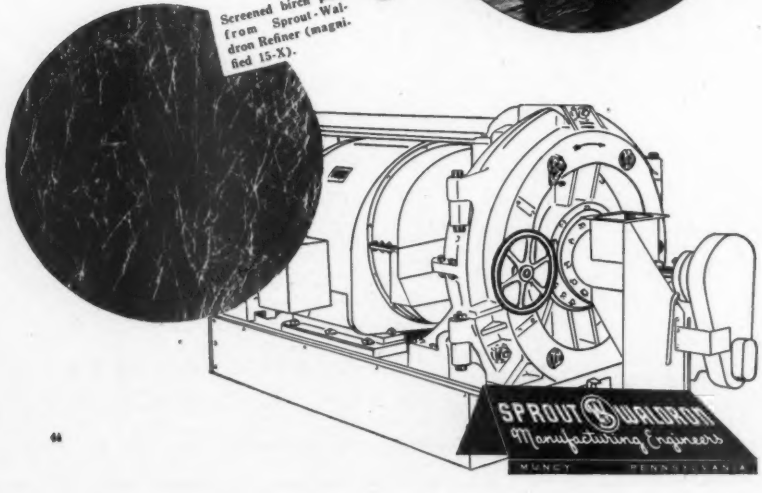
SPROUT-WALDRON offers you its technical knowledge and experience in consultation.

SPROUT-WALDRON & CO.
32 Waldron St., Muncy, Pa.

1

Partially cooked birch chips from digester—(actual size).

2



Screened birch pulp from Sprout-Waldron Refiner (magnified 15-X).

SPROUT WALDRON
Manufacturing Engineers
MUNCY PENNSYLVANIA

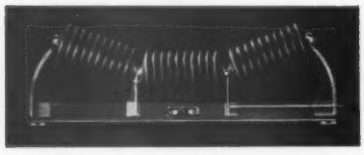
Barrell's Paper Annual Contains New Features

Now off the press, the 1949-1950 edition of Barrell's Paper Annual, contains the second in a series of illustrated articles entitled "Great American Research Laboratories," describing the extensive experimental station of E. I. du Pont de Nemours & Co.

A new feature of this year's annual will be of particular interest to those in the pulp and paper industry concerned with the education of their sons. Through the cooperation of the University of Maine, the New York State College of Forestry, the Institute of Paper Chemistry and the Western Michigan College of Education, a brief description is given of the curricula of these four colleges.

The directory section contains an up-to-date list of officers of 33 industry associations.

Members of the industry who are interested in obtaining a free copy should address the William L. Barrell Co., Lawrence, Mass. This annual has been produced for eight years under direction of The Callaway Associates of Boston and is edited by William Bond Wheelwright.



This new, patented Rubber Disc Impact Idler has been anounced by the Industrial Division of Continental Gin Co., Birmingham, Ala., made for troughed, flat and return belts, and are the interchangeable with practically all standard idlers now on the market. Detailed information is available from the manufacturer.

Record Year

Production of pulp and paper reached the highest peak in the company's history in the year ended April 30, 1949 and was 6 per cent higher than in the previous year, according to President Paul E. Cooper, reporting on operations of Pacific Mills, Ltd., Ocean Falls, B. C.

Mr. Cooper said the new steam generator and turbine made it possible to maintain production despite adverse waterpower conditions, and installation of the new kraft digesters increased output and efficiency.

Net sales totalled $20,440,933 in the year ended April 30 last.

RUBBER DOES IT

MOISTURE CAN'T PENETRATE

AIR CAN'T ESCAPE

AND NOT A DRIP NOR A DROP OF FLUID OR GAS GETS BY THE NEW

RUBBER-FACED PLUG

IN DEZURIK EASY-OPERATING PLUG VALVES!

DeZurik's NEW Rubber-Faced Plug delivers a dead-tight, leak-free closure every time on any service. It's the resilient plug that SEALS TIGHT regardless of flow content—the plug that can't stretch, rust or distort, built into valves that can't bind, seize or clog.

GET THE NEW DeZURIK STORY TODAY
Ask for Catalog #49

DeZURIK SHOWER CO.
SARTELL, MINNESOTA

Tough Customers demand Tough Papers—

Now that mills are again competing for business, buyers of paper and board are tough customers. They demand tough papers, strong and flexible with out being brittle.

Mills that rely upon over-heated drier rolls to remove water that should have been squeezed out at the presses are in for trouble.

Tough paper can be made only on tough felts. There are none tougher than Hamiltons. Install correctly specified Hamilton Felts at all your presses. Give them plenty of squeeze—and speed.

- *From the thinnist tissue to the heaviest board there is a Hamilton Felt that will make your sheets better, Faster, cheaper and tougher.*

YES! GO WEST! 1949 Fall Meeting TAPPI ***Portland, Oregon***

SHULER & BENNINGHOFEN
HAMILTON, OHIO
Miami Woolen Mills, *Established 1858*

Hamilton Felts

YOU'LL WANT THIS INFORMATION **BEFORE** YOU BUY

For fast unloading and handling of pulpwood, for symmetrical stacking or rehandling from corded piles—you'll find the size and type you need in this new Bulletin on—

BLAW-KNOX
GRAPPLES

It is complete with photos, diagrams, specifications and performance data of interest to anyone concerned with pulpwood handling. Before you decide on your next purchase write for Bulletin No. 2098.

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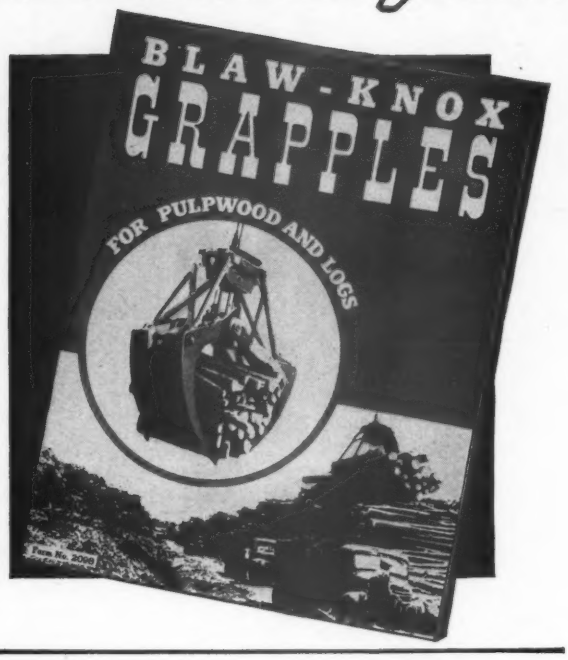

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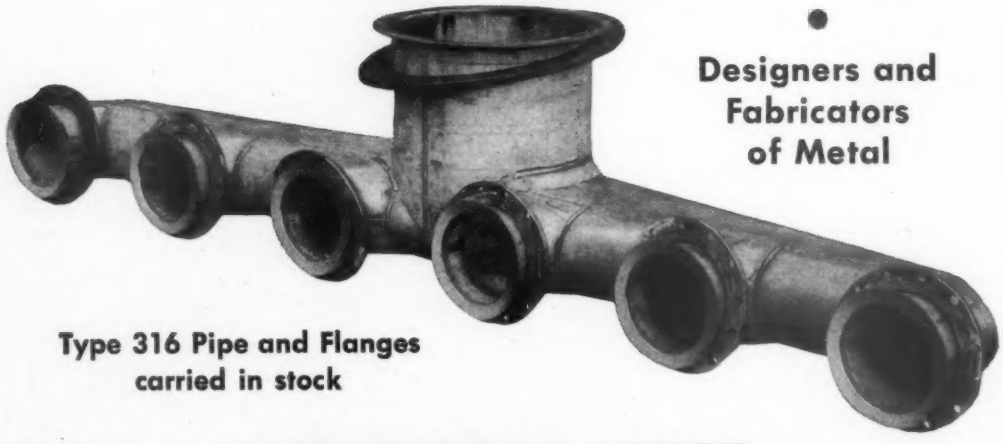

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RAMBLINGS OF A SUPERINTENDENT

(Cont. from page 34)

Stock Preparation

One phase of tissue manufacture which has caused a great deal of discussion and argument in our plant is stock preparation. The chief disagreement concerns beating and refining equipment.

In my opinion, both the equipment manufacturer and the operator can be criticized for faulty installations. The basic requisitioning for refining equipment in the plant usually is carried on by such people as the superintendent, the engineer, and the technical control man. Such men have very definite ideas on what the finished product should be like, but they have many varying ideas on how the stock should be prepared to get that final finished product. Under the circumstances, the selection of the equipment is fraught with a great deal of danger. If the basic requirements are presented improperly to the equipment manufacturer, he has only faulty data with which to work.

It is fair to state that, if the picture is not complete, it is the fault of the people who represent the mill in the discussions with the equipment manufacturer. However, the experienced equipment maker should know that there is a possibility that he doesn't have all of the facts, or that the facts he does have may not be entirely accurate. Therefore, before beginning construction, he should check and recheck.

Mutual lack of knowledge can be blamed for improper recommendations for equipment. To avoid such a situation, some progressive manufacturers are installing laboratories of their own. Pre-examination of all questions will eliminate much useless outlay and correct many headaches.

When a superintendent invests money in a unit, he is risking his reputation with his employer on the investment. At the same time, the equipment manufacturer risks his reputation on the operation of the equipment. No one can afford to gamble here. There probably has been a great deal of equipment removed from service because of improper first selection. The whole trouble stems from a lack of complete understanding of the initial problem on the part of both the user and the manufacturer.

Discussion of Refiners

Returning to the question of refining units, there are a number of good makes. Considerable progress has been made in recent years in the design of the several disc refiners on the market. Jordans have had a tendency to go to small sizes with higher speeds.

A unit which has received a considerable amount of attention recently is the Morden Stockmaster. This unit seems to have been applied more extensively to machines making such grades as glassine, waxing, and the higher finished transparent sheets than to other grades. There probably are some installations on creped tissues, but I don't know of any.

The Claflin refiner also is regarded as a good unit. It is being widely used in mills which I have visited. Claflin operators have spoken very commendably of its performances.

There has been a great deal of discussion on how a jordan should be put into the stock system. On one of our machines, which makes soft creped tissue, is a No. 2 Jones direct-connected to a 75-h.p. motor. This jordan works slightly under pressure. In other words, the stock is put through it under pressure. The tonnage at present is around 35 tons in 24 hours.

The jordan motor probably draws 65 h.p. at the most. Actually there probably is no more than 25 to 30 h.p. being applied to the stock itself; the rest, possibly being lost through friction and other causes.

The small amount of power required on the jordan shaft was interesting to us. We had originally expected higher power requirements. This jordan has proven itself in service. We are extremely glad that we put it in as a trial unit before going to a more expensive and higher powered job.

Soft crepe tissue mills in general tend to go to the smaller high-speed type of jordans or refiners. Certainly they are easy to install, and each individual unit doesn't cost too much. It also is not prohibitive to have more than one on a machine in case of trouble.

Last year, when putting in our new soft crepe tissue machine, we installed a new unit in the screening position—a Selectifier made by Shartle Bros.

The Selectifier consists essentially of a stationary tub in which is installed a perforated circular plate with a set of revolvable blades on the inside. The revolving of these blades gives motion to the stock which passes through the perforations in the plate.

Accepted stock goes through the perforations; rejected stock goes down and out through a reject unit. The reject unit can be set so that it will discharge at any desired time interval. The amount of material coming out of this reject unit is very small and the pulp lost through it cannot be very great.

We plan to flow the discharge into a riffler to see what it amounts to; but I don't believe it will prove worth saving.

So far as our installation is concerned, the Selectifier is not a screen in the sense that it will take out fine dirt. We do not intend it to take out the fine dirt as a Bird screen or a flat screen or some similar type of screen. We simply want it to break up any lumps and take out foreign matter such as wire, nails, screws, stones, string, etc.

The perforations in the circular plate of Selectifier can be obtained in a range of sizes. The larger the perforations, the more a unit will handle. At present we are handling up to 35 tons a day through our unit at a consistence of around 3/10 of 1%.

If you plan to discuss such an installation with the manufacturer, carefully determine the amount of water you are going to handle. The capacity of a unit is determined by the quantity of water that can pass through the perforations.

On another paper machine, where we want to take out fine dirt, we have a Bird screen. It is our plan to install Dirtec units on this screen. We are interested in seeing them work for us.

Comments from the trade have been very favorable on such stock cleaning units as the Dirtec and Nichols-Freeman Vortrap.

The New Paper Machine

We have not operated the new machine long enough to learn much about the operation of its headbox and the slice. However, when considering a new headbox or a new slice, and especially if considering a new machine, be sure to allow yourself ample width of slice. Without an operating record for a check, it is very difficult to know how much shrinkage the sheet takes going from the slice to the reel.

One of the critical operating problems at the slice is the formation of good edges. We use fan type showers on the wire to clean off any improperly formed edge. The better the edges are formed the less the trouble as the paper goes through a machine.

Going back to the Selectifier in our installation, we like it because the water does not cascade out into the open. It goes directly from the wire pit into a fan pump with the stock being introduced to the water just ahead of the pump. The stock then flows through a completely closed pipe system to the Selectifier and from the Selectifier to and through the headbox arrangement. This design keeps out much of the entrained air which occurs when water cascades from the discharge end of an open screen.

We find the use of rectifier rolls in the headbox to be beneficial. We have one on order which will not contain any heads in the ends of the roll. This feature will permit the water to flow through the roll without the disturbance that would be set up by a solid head at each end. We have hopes that the design will improve edge conditions.

We try to set a slice so that it is in about the middle of its travel. In other words, an operator can move the individual adjustments up or down if the slice is set in this position. If an operator gets a slice so that its adjustments are all the way up or all the way down, he can go only in the opposite direction.

The amount of water carried behind the slice is very important. We want to carry the flow of water right down to the first suction box so

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as to give the stock all of the time available to it for formation.

Some of the very recent machines installed by the larger tissue companies do not have headboxes but have pressure inlets. On one machine in particular, the stock discharges down on the wire right after the breast roll in such a manner that a great share of the water goes through the wire immediately, thus almost instantaneously depositing sheet furnish on the wire.

The wire itself is very short. I am told that it is long enough only to be guided properly on the machine. Also I am told that this machine is running in the neighborhood of 2300 to 2500 ft. per minute with the possibility of going to 3500 ft. per minute. This installation is a pronounced indication of the trend away from the typical open headbox. I have examined samples of paper made on this machine and their formation is good.

One of the questions that always comes up in selecting a new paper machine is the length of the wire. For high-speed operation, we always have considered the need for a long wire. However, the machine just mentioned runs as fast as any I know of and yet it has a very short wire. It therefore seems that the length of wire depends on how you are going to deposit the stock upon it. If you want it to flow and spread and form down the length of the wire, it seems that you would need a long wire. However, if you are using a high pressure type inlet, the length of the wire doesn't seem to be of any importance.

We have used dandy-type table rolls and believe they should be used when running free stock. In our case, we want the water to carry down the wire. The use of these rolls permits such travel better than would solid rolls. We also find that solid rolls at high speed disturb sheet formation once it has been set up on the wire.

We use Micarta deflectors on table rolls. They are mounted on stainless steel holders. The setting of these deflectors is important if worms, wrinkles, etc., in the sheet are to be eliminated.

We have provided oscillating doctors on the wire carrying and wire return rolls and on the breast roll.

On the couch, which is grooved, we have a Micarta doctor on one machine and a water shower doctor on another machine. We don't know which installation is the better of the two—both seem to work all right.

Deckle straps, as such, seem to be disappearing. In their place are found the fixed stationary deckles. These latter deckles are built to be adjustable in and out on the wire, up and down from the wire, and in an angular setting to the plane of the wire. The use of rubber lips on these deckles provides an arrangement whereby the stock and water, when coming out from the slice, can roll up and turn back on to the wire to form a solid edge along each deckle. This edge is showered off on the fan showers located just after the suction boxes on our machine.

With respect to picking up from the wire on a top felt arrangement, we had a little difficulty with our new Yankee machine at the start. We are using a suction pressure roll on the Yankee in place of a plain pressure roll. When first placed in operation, the top felt came back to the couch roll quite dry. Now, we are running with showers on this top felt to moisten the surface before it gets to the pick-up position.

Some of the Midwestern mills I have been fortunate enough to visit, carry their top felts quite wet. In fact, such felts glisten in the light.

We also find that if our stock is jordaned too heavily, it does not pick up nearly as well as if jordaned lightly. This finding is one of the reasons for the low power consumption on the jordan.

The conditioning of bottom wet felts has been a subject of considerable discussion in our plant. We have not used suction boxes for conditioning wet felts for quite some time. The fault, I believe, is entirely our own. We went away from a suction box conditioner which we believe had been improperly installed. The conditioner gave bad felt life so it was taken out and a set of showers and wringer rolls installed in its place. The wringer rolls have worked very nicely and with very little trouble.

We don't know, however, how wringer rolls compare with the new properly installed suction box type of conditioners. On a trip into the South several years ago, all of the kraft machines that I saw were using suction box conditioners on their bottom wet felts. They must be all right. However, inasmuch as we are satisfied with the wringer rolls, we plan to keep them. On the new machine, we have one wringer roll directly-connected to a helper motor drive. This drive takes the load from the felt which should help our bottom felt life.

In a suction press position, we have a bronze shell which we plan to have rubber-covered. One mill of my acquaintance operates without any rubber covers on its suction shells and gets remarkable felt life. I think the mill gets this excellent felt life because of the care given to the shells after they are ground. I believe that all holes in the shells are reamed carefully and then all burrs are very carefully polished away. The time taken for such work probably is rather long but it pays off in the long run—their felt life is excellent despite high-speed operation.

The suction press roll is a remarkable piece of equipment. When it works well, it does a remarkable job of taking water out of the sheet. Our roll works so well that we get very little chance to get practice in maintaining it. When we do have trouble, we sometimes are at a loss to know what to do.

Our most common trouble is loss of vacuum. When this trouble occurs, we sometimes find that someone has failed to put the sealing rods in properly following a disassembly of the box and before putting it back into the roll.

We also have found that if the vacuum does not come up immediately, artificial means can be used to build it up. To do so, we take a piece of top felt—cut it to the length of the roll and to the width required to cover completely the suction area of the roll. We lay this felt right on top of the roll and start the vacuum while running a good flood of water on the felt. This procedure tends to build up a higher vacuum than normal. Because of this higher vacuum, the suction boxes generally loosen up and come up to the desired vacuum of their own accord.

After this work has been done, we generally start up the machine and find that the vacuum drops again but rests at a higher position than before. If we are patient at this point, the box generally will wear in rather quickly. When we lose the full performance of our suction rolls, we are dismayed because of our inexperience with them.

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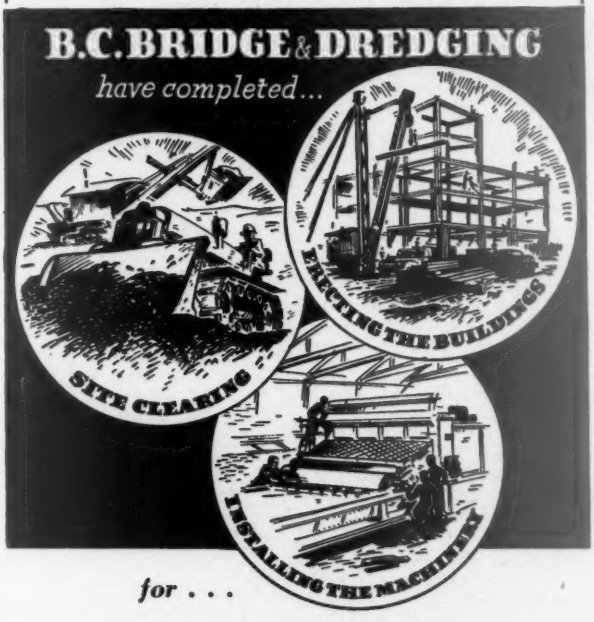

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nection with press and pressure rolls is proper crowning. Another good innovation of comparatively recent date in paper machine design is the use of air loading on presses and pressure rolls rather than mechanical arms and weights. The gauges in such an installation provide a good control for the operator to tell how much pressure he is carrying along each nip.

Problems At the Dry End

Drying is a considerable problem in any paper mill, whether the individual machine is equipped with standard dryers or is a Yankee with dryers following, or with a Yankee alone. I believe that the single Yankee dryer type of machine is the hardest machine on which to control drying. This dryer gives you only one chance to dry the paper. If the sheet is not dry by the time it gets around the Yankee, you have no further chance of taking out the additional moisture. It is therefore important that the dryer hood be designed for high efficiency, and that the air supply and the exhaust systems be properly engineered.

There is a considerable amount of argument among the manufacturers and the users as to what a hood should be like. Diamond likes to get a hood built in as close as possible to a dryer, thus allowing as little chance as possible for cold air infiltration. This concept develops a problem because the machine operator has to get near the dryer to get at his felts and to operate his machine.

Some operators feel that the air flow should be in a direction opposite to sheet travel. Other operators feel that best results are obtained if the air is blasted directly against the sheet and at right angles to it. In our particular systems, the air supply is directed against the sheet with a velocity effect of about 4000 feet a minute at each nozzle.

There also is an argument as to whether air is best on the upgoing or on the down-turning side of a Yankee. There probably is more to the thought that air is best spent on the side where the sheet is wettest. Surely, that is where there is most vapor removal per foot of travel. One thing to make certain about is that the exhaust fan takes out a sufficient quantity of air. It would be harmful to have a bottleneck at this point.

An important consideration in any drying system is water removal from the dryers. An interesting innovation in recent years is a Midwest-Fulton unit that re-circulates condensate water back into the incoming steam line to knock down any superheat that might be present. This method of handling condensate has the advantage of giving saturated steam conditions at the inlet to the dryer and also keeps the temperature of dryer bearings down to a minimum.

Creping Process

Tissues can either be flat or creped. Flat tissues are made on machines of conventional Fourdrinier design with dryers following, on Yankees followed by after dryers, and on straight Yankees.

The main problem in the drying of a flat tissue probably is to maintain a proper rate of drying so that you don't burn the sheet nor get it to run into cockles or other similar mechanical faults.

Creping is done either on a cold small roll, on a heated medium size dryer, or on a very hot large dryer. We find that paper creped on a small cold roll is suitable for napkins, especially if they are embossed on napkin folders afterwards.

Creped paper made on a small cold roll is not ordinarily soft, although it can be made soft if it is given sufficient mechanical treatment through calendering afterwards. We have found that if a sheet is embossed first and calendered afterwards that softness is greatly improved.

On one of our tissue machines, we crepe on a Yankee at about half dryness. The sheet made at about 1500 feet, and subsequently dried on 5-ft. following dryers, is half way between a wet creped sheet and a fully dry creped sheet. The one feature about a semi-dry or a dry creped sheet is that you can hold the bulk up higher, thereby allowing calendering for added softness.

The problem of creping against a Yankee dryer at high temperature as compared to a smaller dryer at low temperature is somewhat different. Creping blade wear on a small cold roll is not great and creping blade changes are few. As you get into higher speeds and higher temperatures, however, the creping blade wear is greater. Also, the effect of this wear on the surface of the Yankee is something to consider. Yankee dryers kept in good condition require grinding every 1 to 2 years. Those dryers, which run without creping, can run several years without grinding and still be efficient.

We have had quite a few discussions in our plant on doctor blade preparation and care. We have found that if a blade is filed square it produces about the type of crepe we want.

Some people will file a blade square and then bevel off the back side away from the dryer surface. This practice gives a thinner top surface with resultant finer crepe, I believe, than we get. It always is a matter of taste and just what you find to be the best for your particular requirements.

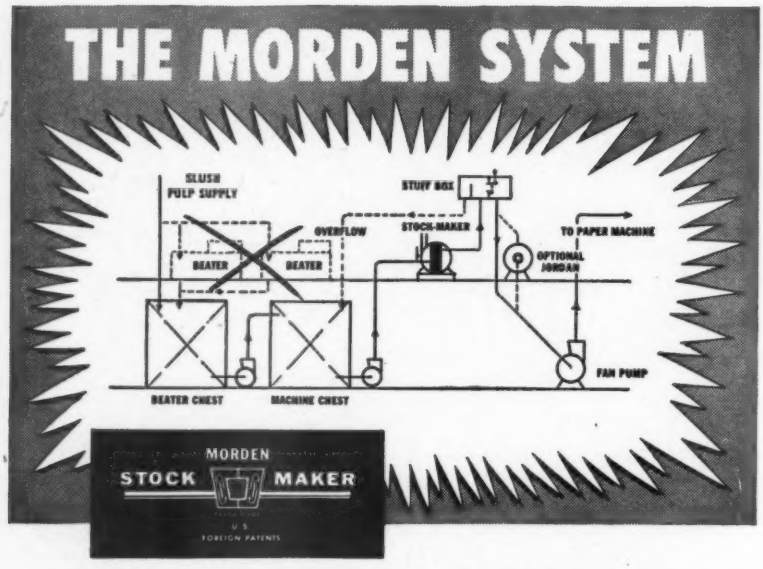
On modern machines, doctor blade pressure is applied through pneumatic cylinder loadings. This arrangement permits an operator to check on the pressure being applied to a doctor blade holder.

We use a skinning doctor on our new machine. With it, we can change creping blades without lifting the couch off the wire. The machine continues to make paper; but the skinning doctor takes it away from the Yankee ahead of the creping blade. After the creping blade is changed, the skinning doctor is lifted, thus allowing the paper to go back down to the creping blade position. This procedure reduces the danger of damage to felt and wire, and saves time.

Another subject on which a great deal of argument takes place in the trade is the type of slitter to be used on a rewinder. We use three types: Cameron, shear and sawtooth. The Cameron-type slitters are used on papers not creped; the shear-type slitters, on creped papers, where they are soft. On our large tissue machine we use a riding slitter, in which is mounted a saw tooth blade.

Each slitter has certain advantages; and we are undecided which is the better in any of the grades. Here again it is a matter of choice.

When we started the big machine several years ago, we learned that if we slit too far back from the wind up position that the sheets had a tendency to interlock. The interlocking made it difficult to separate the rolls after they



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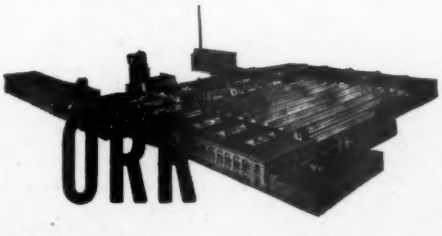

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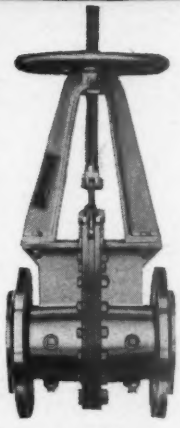

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were wound up. It was for this reason that we put the riding slitter in place and have had no further trouble with interlocking.

Anyone who makes creped papers, either semi-crepe or dry-crepe, will recognize that dust is a problem. The only preventative, presumably, is an exhaust and vacuum type system to pick it up where it is formed. You can't remove all the dust, but you will get the biggest share of it.

We are going to experiment with dust settler that utilizes a fine vapor fog created either by water pressure or a combination of air and water pressure. We hope that it will take the dust out of the air and settle it down.

We have been advised that this equipment is being used with success in the cotton industries. For that reason, we are going to try to adapt it to our mill. The fire insurance people are concerned over our dust problem, but we have never been able completely to solve it.

In the layout of our new machine, the engineers recommended a type of lighting which is a joy to behold. The installation was a little on the expensive side, but it certainly lights up the room nicely and gives good light at the working plane. It is a Mazda lamp and mercury type lamp combination. Both lamps burn at the same time. The combination of light from the two sources improves light at the working level. One light source without the other isn't very good; but the combination of the two sources is excellent.

Pumps and Motors

No discussion of a tissue mill would be complete without a chat of a minute or two about some of the auxiliary equipment.

We are impressed by the performance of our pumps. We have water pumps installed which have been operating continuously for nearly 20 years; yet maintenance on them has been very minor. Stock pumps give us a little more trouble; but the difficulty stems from obstructions and not from flaws in the apparatus. Sometimes trouble occurs when the operators get the stock too heavy.

We are particularly impressed by the operation of Nash-type vacuum pumps in paper mill work. In the operation of a Nash pump, the correct amount of sealing water is essential. Too much water cuts down pump efficiency and increases wear. Too little water doesn't provide proper seal for vacuum formation.

It is amazing how long equipment of this type will run. It is astounding how it will stand up under adverse conditions of operations.

Nothing apparently can be more reliable than the conventional induction type of electric motor. Some of the motors I have seen taken out of service actually have been thoroughly wetted down, and still they performed. This kind of treatment is not recommended for motors; but it demonstrates that this equipment is both rugged and dependable.

The electrical manufacturers are to be congratulated on the fine job they have done in recent years in improving motor enclosures. It has resulted in equipment that stands up better under paper mill operating conditions. Remote control of electrically operated equipment also has been very beneficial. With it, operators have complete and instant control of process work.

The complexity of modern electric drives, however, when contrasted with the simple single motor electric drives of a few years back, calls for new skills. It would seem wise for the electrical manufacturer to train some employee in each plant to handle his equipment after his engineers have left the job.

Some superintendents feel that the electric drive is not dependable—that it will not maintain steady draws. We have one machine that is practically completely electrified. If there is any mechanical drive that is more positive than the drive on this machine, I'd like to see it.

Finishing and Converting

Because of competitive market conditions, we have to be very careful about the quality of our paper today. The best is none too good. The big high class mills which have always made quality products are making better quality products and more of them than they ever did before. The smaller operators must follow suit or lose out.

When paper is made with a great deal of care, it should be handled with a great deal of care afterwards. From the time it leaves the rewinder of a paper machine until it is boxed in the converting department, it should be handled in a manner that keeps waste at a minimum. Our rolls at Diamond are palletized to effect this result. We find wood pallets and an electric fork truck the best combination.

Converting operations should be as carefully watched as are the paper mill operations. Wrinkles, poorly formed sheets, bad counts, poor packaging, improper casing, and all such things seriously affect the impression a product makes on a customer. A new trend seems to be the use of pictures on shipping cases. The pictures show what is inside. Bear in mind that a storeroom or warehouse employe of a consignee is more impressed when he knows what is inside of a case than when he doesn't. In other words, a picture means more to him than an item number. Certainly, a picture means more to such an employe than a lengthy description on the outside of a case. He is more likely to suggest re-ordering a product that pleases him than one which gives him trouble in re-ordering.

In the mill warehouse and on the loading platform, the mill product should be handled to avoid damage. Cars should be loaded carefully. It is very annoying to a customer to receive damaged merchandise. It is about like getting a new automobile with a lot of scratches on before you get a chance to drive it. The probability is that you wouldn't accept a car so damaged; and the chances are a customer of paper goods feels the same way about them when received in damaged condition.

Congrats. to Canadian Cellucotton Products Co.

The Canadian Cellucotton Products Co., Ltd., at Niagara Falls, Ont., has completed three consecutive years of accident-free operations, passing 2,500,000 man-hours and is heading for 3,000,000 as its next goal.

Western Wares

Over 110 major manufacturing concerns will exhibit their wares at the second Western Packaging Exposition, held this year in San Francisco at the Civic Auditorium, August 9 through 12. This totals 34% more exhibits than last year.

Waxed Paper Institute

Plans for added research and promotion on behalf of waxed paper were discussion topics at the two-day session of Waxed Paper Institute, Inc., at Hamilton, Ont., in mid-June.

Honorable Dana Porter, Attorney General for the Province of Ontario, addressed the group. Presiding officer was the Institute chairman, William P. Patterson, Specialty Papers Co., Dayton, O.